KS-8 WELL HISTORY

5/1/91 Depth: 0'
Moved in over 10' deep cellar and rigged up with Parker Drilling Co., Rig #231, on Well KS-8. Picked up Eastman mud motor and drilled rat hole.

5/2/91 Depth: 77'
Drilled rat hole with mud-motor using 12-1/4" bit. Picked up 26" bit on mud-motor. Drilled 26" hole from 35' to 77'. Laid out bottom hole assembly, picked up 42" hole opener. Waited on daylight because of noise complaints.

5/3/91 Depth: 77'
Waited on daylight because of noise complaints. Opened 26" hole to 42".

5/4/91 Depth: 77'
Opened 26" hole to 42" hole to 74'. Laid down bottom hole assembly. Picked up 30" conductor and ran in hole, set conductor on bottom. Picked up one joint of 5" drill pipe, blew hole dry with air and foam. Pulled out of hole. Cemented 30" conductor with 35 sacks Hawaii cement. Waited on cement. Cemented top of 30" conductor with 9 cubic yards of ready mix cement. Topped off cement job on conductor with 115 sacks Hawaii cement. Welded on rotating head flange to 30" conductor and nippled up rotating head.

5/5/91 Depth: 174'
Continued nippling up rotating head. Picked up 26" drilling assembly and ran inside 30" conductor. Drilled out cement inside conductor. Drilled formation from 74'to 162'. Pulled out of hole, laid out mud motor because of noise. Ran in hole with conventional assembly. Drilled 26" hole from 162' to 174'.

5/6/91 Depth: 269'
Continued to drill 26" hole to 269'.

5/7/91 Depth: 481'
Drilled 26" hole. Tripped for jars. Drilled 26" hole to 481'.

5/8/91 Depth: 587'
Drilled 26" hole to 587'.

5/9/91 Depth: 655'
Drilled 26" hole to 630'. Circulated hole at 630'. Pulled out of hole, rigged up bailing assembly. Bailed water with external sand line at 630'. Bailed until

acceptable sample was obtained for state. Rigged down bailing unit. Changed out bottom hole assembly, ran in hole. Washed and reamed from 605' to 630'. Drilled 26" hole to 655'.

5/10/91 Depth: 779'
Drilled 26" hole to 779'.

5/11/91 Depth: 1026'
Drilled 26" hole. Worked tight hole at 1011'. Drilled 26" hole to 1026'.

5/12/91 Depth: 1039'
Drilled 26" hole to 1039'. Pulled out of hole, picked up 26" reamers. Ran in hole to 169'. Reamed 26" hole from 169' to 347'. Pulled out of hole, waited because of noise complaints.

5/13/91 Depth: 1039'
Reamed 26" hole from 347' to 940' without returns.

5/14/91 Depth: 1049'
Reamed 26" hole from 940' to 1039'. Drilled 26" hole from 1039' to 1049'. Circulated and conditioned hole. Made short trip had 23' of fill on bottom. Reamed 26" hole 1026' to 1049'. Circulated and conditioned hole. Pulled out of hole. Rigged up casing crew. Ran 20" casing. Washed 20" casing to bottom last 4 feet. Rigged down casing crew.

CASING DESCRIPTION

2.75'	Halco 20" shoe
1029.27'	26 joints 20" 94# K-55 Buttress casing
1032.02'	Total

5/15/91 Depth: 1049'
Picked up stab-in sub for 20" shoe, ran in hole. Stung into 20" float shoe, filled DP and casing annulus with water. Cemented 20" casing by pumping 20 barrels water, and 20 barrels Super Flush, 1 barrel water, followed by 445 sacks Hawaii cement with 50 pounds per sack Spherelite, 40% Silica Flour, 4% gel, and 1.25% CFR-3 (yield 3.4 cubic ft/sk., weight 11#/gal), tailed with 154 sacks Hawaii cement with 40% Silica Flour, 0.65% CFR-3, and 3% calcium chloride (yield 1.64 cubic ft./sx, weight 15.4 #/gal). Displaced cement down drill pipe with 10 barrels water. Pulled out of hole with drill pipe, waited on cement. Ran 1" pipe into annulus to 767'. Cemented through 1" pipe with 138 sacks Hawaii cement with 40% Silica Flour, 0.65% CFR-3, and 3% calcium chloride. Pulled out of hole with 1" pipe. Waited on cement.

5/16/91 Depth: 1049'

Ran into annulus with 1" to 767'. Cemented through 1" pipe with 170 sacks Hawaii cement containing 40% SSA-1, 0.65% CFR-3, and 3% calcium chloride. Pulled out of hole, waited on cement. Ran into annulus with 1" pipe to 767'. Cemented with 159 sacks Hawaii cement containing 2:1 Perlite, 40% Silica Flour, 4% gel, and 3% calcium chloride (yield 3.4 cubic ft./sk, weight 11 #/gal). Waited on cement. Ran 1" pipe into annulus to 767'. Cemented through 1" pipe with 308 sacks Hawaii cement with 40% SSA-1, 2:1 Perlite, 4% gel, and 3% calcium chloride. Pulled out of hole. Waited on cement.

5/17/91 Depth: 1049'

Waited on cement. Ran into annulus with 1" pipe to top of cement at 780'. Cemented through 1" pipe with 500 sacks Hawaii cement with 40% Silica Flour, 4% gel and 3% calcium chloride. Pulled out of hole with 1" pipe. Waited on cement. Ran into annulus with 1" pipe to top of cement at 300'. Cemented through 1" pipe with 500 sacks Hawaii cement (yield 1.15 cubic ft/sk, weight 15.8 #/gal). Pulled out of hole. Waited on cement. Ran with 1" pipe to top of cement at 270'. Cemented through 1" pipe with 500 sacks Hawaii cement. Had cement to surface. Pulled out of hole. Waited on cement. Cut off 20" casing and 30" conductor. Nippled up Hydril and rotating head.

5/18/91 Depth: 1049'

Continued nippling up Hydril and rotating head. Laid down 26" bottom hole assembly. Picked up 17-1/2" bottom hole assembly, ran in hole. Worked on cemented up Hydril. Tested casing, pumped into formation at 400 psi. Pulled out of hole.

5/19/91 Depth: 1049'

Finished pulling out of hole. Ran in hole with 5" drilling assembly to top of cement at 996.48'. Serviced rig. Rigged up Halliburton, cemented inside 20" casing with 120 sacks neat cement. Closed Hydril with 15 barrels out drill pipe and squeezed. Cement locked up at 20" shoe. Bled off pressure, pulled out of hole. Ran in hole with 17-1/2" bottom hole assembly. Drilled out cement and shoe. Pulled out of hole. Ran in hole with open ended drill pipe to T.D. Rigged up Halliburton and cemented through drill pipe with 380 sacks Hawaii cement. Pulled out 3 stands. Attempted to fill hole without success. Pulled out of hole. Waited on cement.

5/20/91 Depth: 1100'

Waited on cement, ran in hole with 17-1/2" bit on bottom hole assembly to top of cement at 844'. Drilled cement from 844' to 1028'. Tested casing to 600 psi. Repaired leak on kill line flange. Pressure tested Hydril to 600 psi for 30 minutes. Hydril tested O.K. Drilled cement with 17-1/2" bit from 1028' to 1049'. Tested formation pressure. Pumped into formation at 400 psi with rig

pump at 94-100 strokes. Installed rotating head. Drilled 17-1/2" hole from 1049' to 1100'.

5/21/91 Depth: 1100'
Pulled out of hole. Ran in hole open ended. Washed out 19' of fill. Rigged up Halliburton, cemented through drill pipe with 129 sacks Hawaii cement, containing 8% gel and 3% calcium chloride. Pulled out of hole. Ran in hole with 17-1/2" drilling assembly to top of cement at 1008'. Drilled cement from 1008' to 1055'. Swept hole, circulated and pulled out of hole. Ran in hole open ended, circulated. Rigged up Halliburton, cemented through drill pipe with 105 sacks Hawaii cement with 8% gel. Pulled 2 stands, closed Hydril, squeezed cement with water, pumped 36 barrels into formation to 500 psi squeeze pressure. Pulled out of hole. Waited on cement.

5/22/91 Depth: 1100'
Ran in hole with 17-1/2" drilling assembly, drilled cement from 1031' to 1057'. Pressure tested with pressure going from 180 psi to 130 psi. Pulled out of hole. Ran in open ended. Dropped one stand of drill pipe in hole. Picked up fishing tools, ran in hole, engaged fish. Pulled out and laid down fish. Ran in hole open ended to 1023'. Circulated hole. Rigged up Halliburton, cemented through open ended drill pipe with 243 sacks Hawaii cement with 8 % gel. (yield 1.89 cubic ft/sk, weight 13.2#/gal). Pulled out 3 stands, closed Hydril, squeezed with 35 barrels of water to 800 psi, shut in for 30 minutes holding 800 psi. Pulled out of hole. Waited on cement.

5/23/91 Depth: 1150'
Ran in hole to top of cement at 812'. Drilled cement from 812' to 1050'. Pressure tested formation to 100 psi, did not hold, pressure fell to zero. Drilled cement from 1050' to 1100'. Drilled 17-1/2" hole to 1150'. Circulated. Pulled out of hole. Ran in hole open ended to 1150',circulated. Rigged up Halliburton, cemented through drill pipe with 200 sacks Hawaii cement with 1:1 Perlite, 3 % gel, 0.75 % CFR-3, 3 % calcium chloride and 40 % Silica Flour. Displaced cement with water. Pulled out of hole and waited on cement.

5/24/91 Depth: 1386'
Waited on cement. Ran in hole to top of cement at 940'. Drilled cement from 940' to 1150'. Drilled formation with 17-1/2" drilling assembly from 1150'. to 1165'. Pulled up to casing shoe, washed and reamed from 1121' to 1165', drilled 17-1/2" hole to 1386'.

5/25/91 Depth: 1386'
Pulled out of hole. Ran in hole open ended, circulated. Rigged up Halliburton, cemented through drill pipe with 205 sacks Hawaii cement with 40 % Silica Flour and 8% gel. Pulled out of hole. Waited on cement. Ran in hole to top of

cement at 1198'. Drilled cement from 1198' to 1386'. Pulled out of hole with plugged bit. Ran in hole.

5/26/91 Depth: 1549'
Drilled 17-1/2" hole from 1386' to 1549', circulated and conditioned hole. Pulled out of hole. Ran in hole open ended, circulated. Rigged up Halliburton, cemented through drill pipe with 220 sacks Hawaii cement with 2% calcium chloride. Pulled out of hole. Picked up bottom hole assembly. Ran in hole to bottom of 20" casing. Waited on cement. Ran in hole to top of cement at 1367'. Drilled cement from 1367' to 1549'. Pulled out of hole with plugged bit.

5/27/91 Depth: 1828'
Continued to pull out of hole. Ran in hole. Tagged fill at 1412'. Washed and reamed from 1412' to 1549'. Drilled 17-1/2" hole to 1828'.

5/28/91 Depth: 2020'
Drilled 17-1/2" hole to 2020'. Pulled out of hole. Ran in hole open ended, found 5' of fill on bottom and circulated at bottom. Rigged up Halliburton and cemented through drill pipe with 290 sacks Hawaii cement with 2% calcium chloride. Pulled out of hole. Ran in hole with bottom hole assembly to 20" casing shoe. Waited on cement.

5/29/91 Depth: 2134'
Ran in hole to top of cement at 1848'. Drilled cement from 1848' to 2020'. Drilled 17-1/2" hole to 2134". Circulated and conditioned hole to run 13-3/8" casing. Made short trip to shoe, no fill on bottom. Circulated and pulled out of hole. Rigged up and ran 13-3/8" casing.

5/30/91 Depth: 2134'
CASING DESCRIPTION:

1.10 '	Halco shoe
32.25 '	1 joint 13-3/8", 61#, K-55, New VAM casing
2.75 '	Halco float collar
1872.98 '	50 jts., 13-3/8", 61#, K-55, New VAM casing
219.66 '	6 jts., 13-3/8", 68#, L-80, New VAM casing
2128.74 '	TOTAL

Continued to run 13-3/8" casing. Ran in hole with screw in sub on 5" drill pipe, screwed into float shoe inside 13-3/8" casing. Circulated hole, rigged up Halliburton to cement. Cemented 13-3/8" casing with 705 sacks Hawaii cement with 50 pounds per sack Spherelite, 40 % SSA-1, and 1.25 % CFR-3 (yield 3.40 cubic ft./sk weight 11.2#/gal) followed by 154 sacks Hawaii cement with 40% SAA-1 and 0.65% CFR-3 (yield 1.62 cubic ft./sk, weight 15.5#/gal). Displaced down drill pipe, had good cement returns to surface. Rigged down Halliburton. Pulled out of hole and waited on cement. Cement fell 174' in casing annulus.

Cemented in annulus through 1" pipe with 100 sacks Hawaii cement with 40 % SAA-1 and 0.65% CFR-3. (Yield 1.62 cubic ft./sk., weight 15.5 #/gal). Waited on cement.

5/31/91 Depth: 2134'
Waited on cement. Nippled down 20" BOPE. Cut off 20" and 13-3/8" casing. Welded on 13-3/8" by 13-5/8"-3M well head, preheated with Hot-head.

6/1/91 Depth: 2153'
Nippled up 13-5/8" BOP stack and welded on flow line. Function tested rams Hydril and HCR valve. Tested blind rams to 600 psi for 30 minutes O.K. Changed out bottom hole assembly and ran in hole to top of cement at 2073'. Pressure tested casing to 600 psi, O.K. Tested pipe rams, choke manifold and Hydril to 600 psi for 30 minutes, O.K. Drilled out float collar. Tested shoe to 600 psi for 30 min, OK. Cleaned out shoe and cement. Drilled 12-1/4" hole from 2134' to 2153'.

6/2/91 Depth: 2347'
Washed and reamed to bottom (18' of fill on bottom). Drilled 12-1/4" hole from 2153' to 2276'. Tripped for mud motor. Directionally drilled 12-1/4" hole from 2136' to 3478'

6/3/91 Depth: 2627'
Directionally drilled 12-1/4" hole from 2347' to 2627'. Tripped for drilling assembly.

6/4/91 Depth: 2820'
Washed and reamed from 2270' to 2627'. Drilled 12-1/4" hole from 2627' to 2641'. Tripped for mud motor. Directionally drilled 12-1/4" hole to 2820'.

6/5/91 Depth: 2993'
Directionally drilled 12-1/4" hole from 2820' to 2936'. Tripped for bottom hole assembly. Washed and reamed from 2627' to 2936'. Drilled 12-1/4" hole to 2993'.

6/6/91 Depth: 3318'
Drilled 12-1/4" hole from 2993'to 3075'. Tripped for drilling assembly. Washed and reamed from 3032' to 3075'. Drilled 12-1/4" hole 3318'.

6/7/91 Depth: 3401'
Drilled 12-1/4" hole from 3318' to 3401'. Tripped for mud motor. Attempted to drill, mud motor inoperable. Pulled out of hole 15 stands, well started to flow, ran back to bottom. Circulated and built mud weight.

6/8/91 Depth: 3401'
Circulated and built mud weight from 9 #/gal to 10.5 #/gal in 1/10 #/gal increments. Spotted 11.2 #/gal mud pill on bottom. Pulled out of hole with mud motor, well flowed 1" stream continuously. Ran in hole open ended with 5" drill pipe, circulated bottoms up at 13-3/8" casing shoe. Ran in hole to 3401', circulated bottoms up.

6/9/91 Depth: 3401'
Cemented at 3401' through drill pipe with 50 sacks Hawaii cement premixed with 20% SSA-1, 0.75% CFR-3, and Halad-22. Displaced cement with 59 barrels mud. Pulled 3 stands and circulated, well continued to flow. Waited on cement, ran in hole and tagged cement at 3289'. Cemented through open ended drill pipe with 28 sacks Hawaii cement premixed with 20% SSA-1, 0.75% CFR-3 and 0.05% Halad-22A. Displaced cement with 58 barrels mud. Tripped for drilling assembly. Drilled cement from 3151' to 3350'. Circulated to cool hole, conditioned mud.

6/10/91 Depth: 3401'
Checked well for flow, well still flowing 1" stream to mud pits. Tripped for open ended drill pipe, circulated at 2135'. At 3350', circulated bottoms up. Spotted cement plug; cemented through drill pipe with 50 sacks Hawaii cement with 40% SAA-1, 0.75% CFR-3 and 0.3% Halad 22. Displaced cement with 58 barrels mud. Pulled up to 2135', circulated and waited on cement. Ran in hole to top of cement at 3140'. Circulated and pumped cement through drill pipe at 3120'; cemented with 35 sacks Hawaii cement with 40% SAA-1, 0.75% CFR-3 and 0.3% Halad-22. Displaced cement with 54 barrels mud. Pulled 5 stands to 2660'. Closed in well, squeezed away 3 barrels, at 300 psi. Pulled out of hole. Picked up drilling assembly and ran in hole to 13-3/8" casing shoe. Circulated.

6/11/91 Depth: 3401'
Finished trip in hole, tagged top of cement at 2845'. Drilled cement from 2845' to 3350'. Conditioned for log. Pulled out of hole 8 stands, gained 20 barrels mud in pits, ran in hole to bottom. Circulated and cooled hole. Checked flow, had 1" flow to pits. Pulled out of hole and rigged up HLS to run temperature log.

NOTE: The reasons for running the temperature logs at this depth were to develop diagnostics in an attempt to determine a correlation of temperatures in well KS-8 as compared to the temperatures encountered and logged in well KS-3.

Two HLS logging runs were run, temperatures were continually displayed in the HLS logging truck and recorded on both magnetic tape and a standard paper temperature log. Well KS-8 was logged to a depth of 3325'. The top of cement at this time was at 3350'. The logging tool was not allowed to run into the

bottom of the hole in order to avoid becoming stuck in the cement at 3350'. The first temperature logging run encountered a maximum temperature of 370 degrees F at a depth of 3325'. The temperature data was plotted on a graph of depth vs. temperature, on the same graph the temperature of well KS-3 was also plotted to obtain correlation between KS-8 and KS-3.

A temperature correlation was obtained between KS-3 and KS-8 and it was determined from the correlation that based on temperature KS-8 encountered temperatures equivalent to KS-3 but at a depth of approximately 550 ft. deeper in KS-8; ie, the temperature of 370 degrees F. encountered in KS-8 was encountered at a depth of 3400' whereas the temperature of 370 degrees F was encountered in KS-3 at a depth of 2850'. At the conclusion of HLS temperature log run # 1 while pulling out of the hole and attempting to log up the hole the HLS tool failed most likely because of excess temperature. (HLS wire-line was rated to a maximum temperature of 500 degrees F.)

It was decided by PGV personnel to run an additional temperature log in KS-8 in order to gain some idea of the rate of temperature buildup in the well. Another temperature tool was selected and HLS rigged up to run an additional temperature survey. In addition to the temperature tool it was decided to run two maximum reading thermometers (MRT's) on top of the logging tool. The HLS temperature tool was run in the well and temperature recording was commenced at a depth of 2204', the shoe depth of the 13-3/8" casing. The HLS tool logged down to a depth of 3325' where the tool failed due to excess temperature above what the tool and logging wireline were rated for. The HLS tool was brought out of the hole and the two MRT's were examined to determine the maximum temperature to which they were exposed. The top MRT was broken and no data were obtainable, the bottom MRT failed to register a maximum temperature due it is thought to a faulty thermometer.

Afternoon of 6/12/91

A meeting was called in the offices of PGV, attendees were as per recall:

Bill Teplow
Jeff Sternfield
Bill Livesay
Butch Clark
Terry Crowson
Wendell Howard

It was decided at the meeting referred to above that PGV would elect to drill deeper in order to set the 9-5/8" casing in the well at a depth nearer to 4000' as originally detailed in the well program. It was decided to drill out the cement in

the bottom of the well after circulating bottoms up at 3350'. It was decided to maintain a mud weight of 10.5#/gal in circulating bottoms up and to drill ahead with this mud weight. It was also decided to make MRT runs inside the drill pipe at every stand after drilling commenced. It was planned to plot the MRT data on the temperature graphs and by means of this data to ascertain when to run 9-5/8" casing.

RETURN TO DAILY DRILLING REPORTS

6/12/91 Depth: 3488'

Ran HLS logs, (DIL, GR, GRD, and Temperature), logged down to 3325' started to log up HLS tool failed while coming up hole. Re-rigged HLS and ran temperature tool only, tool was run in to 2204' and logging commenced from that depth on down, HLS tool failed at or near well depth of 3325'. Picked up bottom hole assembly and ran in hole to top of cement at 3350'. Drilled out cement in 12-1/4" hole from 3350' to 3401'. Drilled 12-1/4" hole in new formation from 3401' to 3488'. Well unloaded, indications to the driller were that pump pressure was increasing and the driller was picking up the Kelly to close the BOP's when the well unloaded.

6/13/91 Depth: 3488'

Attempts were made to kill Well KS-8. (DETAILS ARE LISTED IN ANOTHER REPORT)

BRIEF OUTLINE OF WELL KILL ATTEMPT

Picked up on kelly, closed bottom pipe rams (steel rams). Rams even though closed, leaked steam and water, closed in on top rams and opened 4" kill line. Rigged up on standpipe and closed standpipe valve, pumped water through standpipe and Kelly hose with Halliburton, pumped down drill pipe at 9 barrels/minute. Opened up choke line to divert flow from under the rig. Closed choke line pumping 9 barrels/min down drill pipe at 1400 psi. Worked on getting in to bottom of cellar to hook up to 13-3/8" casing head valves in order to dead head water into well.

6/14/91 Depth: 3488'

Continued to attempt to kill well, worked in cellar, hooked up to 13-3/8" wing valves on casing head. Rigged Halliburton to wing valves, pumped down 13-3/8" annulus at 5 barrels/minute with water at 1700 psi, pressure gradually decreased to 1000 psi, concurrently with pumping into annulus pumped down drill pipe with water at 5 barrels/minute at 900 psi.

6/15/91 Depth: 3488'

Pumped lost circulation material into 13-3/8" wing valves in an attempt to seal off around pipe rams and to stop leakage of steam and water around stack. Lost circulation material succeeded in plugging off leaks around pipe rams. Cleared off rig floor. Worked on repairing rig. Continued to pump down drill pipe and into casing annulus.

Drill pipe	4 barrels/min	@900 psi
Casing	4 barrels/min	@950 psi

6/16/91 Depth: 3488'

Worked on Parker Drilling Company mud lines. Changed out top drill pipe rams in BOP stack. Closed top rams on drill pipe, opened bottom set of rams, stack held O.K. Changed over from pumping with Halliburton to pumping with Parker Drilling Company rig pumps. Released Haliburton. Changed out Hydril rubber. Continued pumping into well.

Drill pipe	4 barrels/min	@900 psi
Casing annulus	4 barrels/min	@950 psi

6/17/91 Depth: 3488'

Pumped into well with cold water:

Drill pipe	3.5 barrels/min.	@ 678 psi.
Casing	4.5 barrels/min.	@ 827 psi

Continued with rig repair, replaced floor plates, flow lines, air lines, electric lines, etc.

6/18/91 Depth: 3488'

Continued with rig repairs, continued pumping water into well.

Drill pipe	3.0 barrels/min	@650 psi
Casing	3.0 barrels/min	@900 psi

Attempted to change out TIW valve on bottom of kelly, well flowed back with full 2" stream. Shut pipe in and pressure increased to 700 psi. Continued to pump cold water into well.

6/19/91 Depth: 3488'

Continued to pump water down drill pipe and into well annulus to cool well. Rigged up Halliburton and Parker Drilling Co. pumps to well annulus, performed an injection test into the annulus. Pumped 17.5 barrels/min. at 1000 psi, limit

of pumping capability. Rigged up to drill pipe and annulus and continued to pump cold water into well. Mixed and pumped 40 barrel. LCM pills into well annulus at intervals in an attempt to plug off upper thief zone in well.

6/20/91 Depth: 3488'
Continued to pump cold water into well. Pumped 100 barrel pills with 20-25% LCM, 45-50 viscosity into well annulus, did not observe change in well behavior. Continued to work on rig repairs and installed additional cooling tower.

6/21/91 Depth: 3488'
Pumped down drill pipe and backside to cool well. Mixed up 90 barrels. of 14#/gal mud and pumped 30 barrels down drill pipe to kill flow in drill pipe. Changed out kelly cock valve, pumped fresh water down drill pipe to displace mud out of pipe. Rigged up wireline to run pressure/temperature survey. Bottom hole temperature, maximum 633 degrees Fahrenheit. Continued to pump cold water to cool well, down drill pipe and into well annulus.

6/22/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

6/23/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	149 GPM	@600 psi
Annulus	99 GPM	@900 psi

6/24/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	149 GPM	@650 psi
Annulus	99 GPM	@750 psi

6/25/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	149 GPM	@750 psi
Annulus	99 GPM	@650 psi

6/26/91 Depth: 3488'
Continued pumping cool water into well, down drill pipe and into well annulus. Rigged up to run pressure/temperature survey, ran in hole to 1800'. Pressure increased on drill pipe and survey was terminated at 1800'. Rigged down lubricator, picked up kelly and pumped into well, 5 barrels/min down drill pipe

and 3 barrels/min into well annulus for 3 hours. Resumed continuous pumping down drill pipe and into well annulus.

Drill pipe	149 GPM	@750 psi
Annulus	99 GPM	@650 psi

6/27/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Rigged up to pump at increased rate down drill pipe, increased rate to 105 SPM, blew nail on pump, drill pipe pressure increased to 1850 psi in approximately 5 minutes. Repaired pump and returned to pumping down drill pipe at 105 SPM for about 90 minutes, drill pipe pressure decreased from 1850 psi to 1650 psi. Backed off pumping rate and resumed normal pumping rates.

Drill pipe	149 GPM	@862 psi
Annulus	99 GPM	@751 psi

6/28/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Started to build water volume.

Drill pipe	149 GPM
Annulus	99 GPM

6/29/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	149 GPM
Annulus	99 GPM

6/30/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Changed out liners in both rig pumps, closed steel pipe rams. Attempted to seal off rams to change out blind rams.

Drill pipe	149 GPM
Annulus	99 GPM

7/01/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Changed out blind rams in BOP stack.

Drill pipe	149 GPM
Annulus	99 GPM

7/02/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Annulus pressure varies from 850 psi to 300 psi.

Drill pipe	149 GPM	@750 psi
Annulus	99 GPM	@450 psi

7/03/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	149 GPM	@740 psi
Annulus	99 GPM	@450 psi

Rigged up Halliburton to pump into well annulus, pumped into annulus at 20 barrels/min, pumped down drill pipe with rig pumps at 13 barrels/min. Annulus pressure varied from 630 to 750 psi, drill pipe pressure at 1985 psi.

7/04/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Picked up drill string, pipe appeared to be free, moved pipe 3 feet, discontinued pumping on drill pipe and pressure increased to 950 psi.

Drill pipe	0 GPM	@901 psi
Annulus	109 GPM	@910 psi

7/05/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	0 GPM	@935 psi
Annulus	95 GPM	@950 psi

7/06/91 Depth: 3488'
Continued pumping cold water into well, down annulus only.

Drill pipe	0 GPM	@935 psi
Annulus	95 GPM	@950 psi

7/07/91 Depth: 3488'
Continued pumping cold water into well, down annulus only.

Drill pipe	0 GPM	@935 psi
Annulus	95 GPM	@950 psi

7/08/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Pressure on well annulus is declining.

Drill pipe	126 GPM	@700 psi
Annulus	91 GPM	@660 psi

7/09/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Pressure on well annulus continues to decline.

Drill pipe	85 GPM	@648 psi
Annulus	135 GPM	@405 psi

Drill pipe pressure decreased from 669 psi to 648 psi, annulus pressure decreased from 738 psi to 405 psi in the last 24 hours. Rigged up HLS wireline services to shoot jets out of bit. Rigged down HLS without running into hole due to management decision. Continued to cool well before running temperature survey.

7/10/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus. Annulus pressure varied from 660 psi to 438 psi.

Drill pipe	85 GPM	@638 psi
Annulus	135 GPM	@385 psi

7/11/91 Depth: 3488'
Continued pumping cold water into well, down drill pipe and into well annulus.

Drill pipe	85 GPM	@628 psi
Annulus	135 GPM	@385 psi

Annulus pressure decreased from 438 psi to 154 psi, then increased to 604 psi and then decreased to 408 psi. Drill pipe pressure varied between 645 psi and 636 psi.

7/12/91 Depth: 3488'
Continued pumping cold water down drill pipe and into well annulus. Performed pump test to determine if one of the bit jets was plugged. With the pump off for 75 minutes the drill string weight decreased by 50,000 lbs. Rigged up HLS to run temperature survey. Started to run survey, tool would not go below 225'. Rigged down HLS. Pumped water into well to continue cooling.

7/13/91 Depth: 3488'

Pumped water down drill pipe and down annulus to cool well. Drill pipe pressure 714 psi, casing pressure 5 psi. Shut both pumps down on annulus and drill pipe. Casing pressure increased to 650 psi in 12 minutes. Started pumping into well annulus and down drill pipe to cool well.

7/14/91 Depth: 3488'

Continued pumping water into well annulus and down drill pipe to cool well. Changed out bonnets on double-gate BOP. Annulus became plugged off with lost circulation material. Rigged up Halco to pump into annulus. Pumped to 600 psi, let pressure bleed off to 200 psi. Pumped up again to 600 psi, annulus takes fluid at very low rates. Drill pipe pressure 885 psi at 179 GPM.

7/15/91 Depth: 3488'

Continued pumping water down drill pipe and into well annulus to cool well. Rigged up HLS to run temperature survey. Ran MRT to 3100', pumped down drill pipe while running survey. Rigged up and ran temperature survey. Hit tight spot. Worked tool down. Pumped down drill pipe while logging. Temperature started to increase at approximately 1650'. At 2100' temperature was 340 degrees Fahrenheit. Temperature was 475 degrees Fahrenheit at 3124'. While pumping into well, the temperature tool came off the wireline at the rope socket. Due to non-availability of correct fishing tool it was decided to order a mouse-trap tool to fish the temperature tool.

Drill pipe	84 GPM	@950 psi
Annulus	126 GPM	@ -02 psi

Plug in well annulus came free,

7/16/91 Depth: 3488'

Continued to pump cold water into well annulus and down drill pipe while waiting on fishing tool to retrieve temperature tool.

Drill pipe	84 GPM	@670 psi
Annulus	168 GPM	@ 11 psi

7/17/91 Depth: 3488'

Pumped down drill pipe at 1 barrel/min, 630 psi and into well annulus at 4 barrel/min, 8-10 psi to cool well. Rigged up fishing tool to fish HLS tools inside drill pipe. Ran in to top of fish at 3210'. Latched on to fish and pulled out of hole with fish. Pulled fish into lubricator. Pumped down drill pipe at 3 barrels/min at 645 psi, pump into annulus at 3 barrels/min, pressure decreased from 400 psi to 1.4 psi. Recovered logging tool, tool was heat damaged. Rigged up sinker bars with shot cord attached, ran in hole to 3480'. Pulled out of hole, cord looked OK. Pumped into well at 6 barrels/min to cool well.

7/18/91 Depth: 3488'

Ran in hole with Dia-log shot #1 to shoot jets out of bit. Set of shot and pressure increased 100 psi on drill pipe. Pressure on well annulus increased to 350 psi. Came out of hole with wire line. Pumped into well at 4 barrel/min down drill pipe and 2 barrel/min down well annulus. Pumped down drill pipe at 2000 psi to test effectiveness of Dia-log shot, pumped at 2000 psi, 12 barrel/min. The conclusion reached was that the shot was not effective. Rigged up and ran Dia-Log shot # 2, shot misfired because of excessive temperature inside the drill pipe. Pumped cold water to cool well, 4 barrel/min down drill pipe, 2 barrel/min into well annulus. Rigged up Dia-Log to shoot shot # 3, ran in hole to 3451', shot off large, triple charge. Casing pressure increased from 4 psi to 925 psi and then decreased to 835 psi. Drill pipe pressure increased from 650 psi to 735 psi and then decreased to 715 psi. Pumped 3 barrel/min down drill pipe, and 2 barrel/min down annulus to cool well. Indications are that jets have been shot out of bit.

7/19/91 Depth: 3488'

Cool well pumping with Halliburton, 4 barrel/min down drill pipe, 2 barrel/min into well annulus. Annulus pressure decreased from 789 psi to -4 psi, drill pipe pressure decreased from 714 psi to 692 psi. Started to mix mud in preparation for well kill. Rigged up to move cement to location for 200' cement plug. Mixed gel to hydrate.

7/20/91 Depth: 3488'

Pumped into well with cold water, 3 barrel/min down drill pipe at 682 psi, 3 barrel/min into well annulus at 750-680 psi. Mud inventory: 1100 barrels of 8.6 ppg mud in Baker tanks, 720 barrels of 8.6 ppg mud in mud tanks.

7/21/91 Depth: 3488'

Pumped water to cool well, 3 barrel/min down drill pipe at 869 psi, and down annulus at 3 barrel/min at 917 psi. Rigged up Halliburton Wireline Services to run Baker Through Tubing Bridge Plug. Ran bridge plug to 1034' and set same, continued pumping on well annulus at 4 barrel/min. Pulled out of hole with Baker bridge plug setting tools. Bridge plug would not hold pressure. Rigged up and ran in hole with overshot, encountered plug/fish at 3094'. Pulled out of hole with overshot, did not engage fish. Made second run with overshot, picked up fish at 3210'. Pulled out of hole, encountered tight hole, worked tight hole from 444' to 44'. Pipe stuck at 44'. Pumped into annulus at 4 barrels/min. Unable to pump down drill pipe.

7/22/91 Depth: 3488'

Pumped water to cool well, 4 barrel/min down well annulus at 952 psi. Worked Baker bridge plug up hole from 44' to 36'. Flowed back 20 barrels. of fluid through drill pipe, drill pipe pressure increased from 420 psi to 1170 psi.

Pumped 13 barrels of fluid into drill pipe at conclusion of flow back. Worked on HLS lubricator grease head. Cut off one tube from grease head. Rigged up lubricator and attempted to pull out of hole. Flowed back 11 barrels through drill pipe, pumped back 12 barrels. Rigged down grease head and cut off 2 tubes. Rigged back up. Pulled fishing tools out of hole. Did not retrieve fish. Rigged down HLS.

7/23/91 Depth: 3488'
Pumped water to cool well, 4 barrel/min down well annulus at 965 psi. Rigged up HLS with conventional pack off. Ran in hole with over shot, packing started leaking. Pulled out of hole laid down fishing tool. Had machine shop manufacture flow tubes for grease head. Rigged up HLS with repaired grease head. Ran in hole with over shot, sat down at 2638'. Pulled out of hole with over shot, no indication of being on fish. Worked on grease head, made second run with mouse trap fishing tool, tool stopped at 2658'. Pulled out of hole with fishing assembly, laid down same. No recovery.

7/24/91 Depth: 3488'
Pumped water to cool well, 4 barrel/min down well annulus at 986 psi. Rigged up HLS, made sinker bar run to 2658'. Ran core barrel to 2654'. Ran star drill to 2658', no indications of drilling formation or other debris. Rigged up Halliburton and pumped into annulus at 4.5 barrel/min, pressure on the well annulus decreased from 986 psi to 939 psi.

7/25/91 Depth: 3488'
Pumped into well annulus at 4 barrel/min to cool well, pressure on annulus decreased from 930 psi to 909 psi.

7/26/91 Depth: 3488'
Pumped into well annulus at 4 barrel/min to cool well, annulus pressure 940 psi. Cudd Pressure Control unit scheduled to arrive Hilo, Hawaii 1730 hours 7/27/91.

7/27/91 Depth: 3488'
Pumped into well annulus at 3.5 barrel/min at 940 psi. Wait on Cudd Pressure Control equipment to arrive on location. Airport closed before plane could land. Charter diverted from Hilo to Honolulu.

7/28/91 Depth: 3488'
Pumped into well annulus at 3.5 barrel/min at 940 psi. Cudd equipment arrived at Hilo, Hawaii airport at 0730 hours. Started to unload at 1000 hours. Began rig up of Cudd equipment on location at 1200 hours.

7/29/91 Depth: 3488'

Pumped into well annulus at 3.3 barrel/min at 930 psi. Continued rigging up Cudd Pressure Control hydraulic 150 snubbing equipment on drill pipe. Pressure tested Cudd BOPE stack to 5000 psi for 15 minutes, OK. Transferred mud out of Baker tank to mud tanks in preparation for drilling out inside of 5" drill pipe. Waited on daylight before snubbing in hole.

7/30/91 Depth: 3488'

Ran overshot on 1-1/4" drill pipe inside 5" drill pipe with Cudd equipment, broke circulation every 15 joints. Circulated bottoms up at 2420', well tried to flow. Flowed well through choke to control flow. Worked overshot over fish, worked tight pipe at 2420'. Worked fish from 2420' to 2417'. Attempted to release over shot, could not release from Baker plug. Worked pipe up to 30,000 lbs in attempt to move fish without success. Changed out top drill pipe rams in Cudd stack, continued to work pipe.

7/31/91 Depth: 3488'

After engaging fish it became possible to pump down the drill pipe into the bottom of the well. Worked stuck pipe, attempted to release over shot without success. Pumped soap down drill pipe with 1 barrel of water. Torqued 1-1/4" pipe to 7 1/2 rounds and worked pipe up to 30,000 lbs in attempt to free pipe without success. Pumped at high rates down 5" drill pipe and 1-1/4" pipe at the same time. Pumped into annulus at 3.5 barrel/min.

Rate:	4 barrel/min
Drill pipe pressure:	896-886 psi
Annulus pressure:	945 psi

Rate:	5 barrel/min
Drill pipe pressure:	979 psi
Annulus pressure:	938 psi

Rate:	5-1/2 barrel/min
Drill pipe pressure:	1057-1015 psi
Annulus pressure:	931 psi

Rate:	6 barrel/min
Drill pipe pressure:	1123-1044 psi
Annulus pressure:	900 psi

Performed stretch test on 1-1/4" drill pipe in order to get data on free point of 1-1/4" drill pipe. (At 30,000 lbs pull, 20,500 lbs over string weight, 1-1/4" pipe stretched 21" and at 20,000 lbs pull pipe came up 18").

8/01/91 Depth: 3488'
Worked stuck 1-1/4" pipe, pumped 126 gal. soap down between 1-1/4" pipe and 5" pipe. Torqued 1-1/4" pipe 5-1/2 rounds, worked pipe from 6,000 lbs to 25,000 lbs, while pumping 3 barrel/min. Pumped down 1-1/4" and 5" pipe at 9-1/2 barrel/min and 2000 psi. Rigged up HLS to run free point, tool failed. Picked up 2nd free point tool, ran in 1-1/4" tubing while pumping 1.5 barrel/min down pipe. Pipe is free down to profile nipple (2340'). Rigged down HLS and Dia-Log. Pumping 3 barrel/min with Halliburton down drill pipe and 1-1/4" drill pipe. Pumping into well annulus at 3.5 barrel/min.

8/02/91 Depth: 3488'
Pump into well annulus at 4.5 barrel/min at 601 psi, pump down drill pipe at 2 barrel/min at 737 psi. Rigged up HLS wire line services, ran in hole with string shot to 2353', pulled 25000 lbs over 1-1/4" drill sting weight. Set off string shot to jar tubing free. Attempt failed, continue working stuck drill pipe. Rigged down HLS, continued pumping into well.

8/03/91 Depth: 3488'
Worked pipe from 20,000 - 30,000 lbs, while pumping down drill pipe at 3 barrel/min. Held pipe at 4000 lbs and pumped down drill pipe at 9 barrel/min, no movement in 1-1/4" drill pipe. Worked 1-1/4" drill pipe every hour, no movement. Rigged up HLS wire line services. Ran in hole to do free point, tool shorted, pulled out of hole. Reheaded free point tool, ran in hole with tool. Pumped 5 barrels/min down both drill pipe and well annulus while running free point. Found 1-1/4" drill pipe free to top of floats immediately above over shot.

8/04/91 Depth: 3488'
Reheaded wire line. Worked 4-1/2 wraps of left hand torque into 1-1/4" drill pipe. Ran in hole with string shot to 2411'. Set off back off sting shot inside 1-1/4" drill pipe. Achieved back off. Worked 1-1/4" pipe. Rigged up HLS to run in to tag profile nipple. Encountered excess pressure in drill pipe, wire line would not fall. Dropped profile plug down inside of 1-1/4" drill pipe. Pumped water behind plug in an attempt to seat profile plug. Profile plug did not seat in nipple. Back flowed tubing at a rate of 1-1/4 barrel/min, shut off flow after 10 barrels. Laid out 1 joint of 1-1/4" tubing. Pumped 3 barrel/min down 5" drill pipe. Continued pumping into well annulus at 4.5 barrel/min at 581 psi, pumping down drill pipe at 5 barrel/min at 768 psi. Decision has been made to set lead plug inside 1-1/4" drill pipe before snubbing same out of hole. Waited on lead plugs for 1-1/4" pipe.

8/05/91 Depth: 3488'
Pumped 3 barrel/min between 1-1/4" and 5" drill pipe. Rigged up slick line tools and lubricator (Pruett wire line unit). Ran in hole with tubing end locator, ran 1.187 gauge ring to 2413'. Ran tubing end locator and found bottom of tubing

at 2220'. Tubing backed off high. Ran lead plug inside 1-1/4" drill pipe, set plug at 2220'. Started snubbing 1-1/4" drill pipe out of hole, shut well in with 11 joints of drill pipe still in hole. Waited on daylight to snub the remaining 11 joints out of the hole.

8/06/91 Depth: 3488'
Waited on daylight. Snubbed the remaining 1-1/4 inch drill pipe out of hole. Rigged up to run Baker bridge plug inside 5" drill pipe, ran plug on 1-1/4" drill pipe to 800'. Waited on orders, pulled out of hole with bridge plug, laid out same. Picked up Tri-State over shot, ran in hole to 200', waited on orders, pulled out of hole, laid out over shot. Waited on orders.

8/07/91 Depth: 3488'
Picked up 2-3/4" over shot, ran in hole with overshot on 1-1/4" drill pipe, filled pipe every 15 joints while going in hole. Tagged fish at 2259', worked over and engaged fish. Over shot released with 10000 lbs pull, would not hold. Pulled out of hole with 1-1/4" drill pipe and overshot. Worked on grapple for over shot. Pumped down well annulus at 3 barrel/min at 387 psi, pumped down drill pipe at 3 barrel/min at 776-800 psi.

8/08/91 Depth: 3488'
Ran in hole with overshot on 1-1/4 " drill pipe, to fish at 2259'. Attempted to work over fish without success. Went over fish several times and set off jars, over shot will not hold on fish. It is thought that the top of fish is burred and overshot will not hold. Pulled up to snubbing point, waited on daylight. Pumped down drill pipe at 3 barrel/min at 728 psi, pumped down well annulus at 3 barrel/min at 478 psi.

8/09/91 Depth: 3488'
Snubbed out 10 joints of 1-1/4" drill pipe and bottom hole assembly, while pumping 3 barrel/min down well annulus and 3 barrel/min down drill pipe. Worked on fishing tools, picked up 1-7/8" grapple and ran in hole, filled 1-1/4" tubing every 15 joints while running in. Pumped 3 barrel/min into annulus and 2 barrel/min down drill pipe while running in hole. Tagged fish at 2259', worked over fish. Pulled up 10000 lbs and slipped off of fish. Worked over fish and jarred on fish with 15,000 - 20,000 lbs, pulled up to 25,000 lbs. Slipped off of fish, worked over fish and slipped off of fish. Repeated 3 times. Moved fish up hole approximately 1' while jarring fish. Tripped out of hole with 1-1/4" drill pipe, laid down fishing tools, picked up 2.74" skirted mill and bottom hole assembly. Waited on daylight. Pumped with rig pump 3-1/2 barrel/min down annulus, 2-1/2 barrel/min down drill pipe.

8/10/91 Depth: 3488'

Attempted to work skirted mill through TIW valve. Worked over skirt to reduce diameter of skirt in order to get through TIW valve. Ran in hole with skirted mill on 1-1/4" drill pipe pumping 0.25 to 4 barrel/min down drill pipe. Milled on fish, milled 8" off the top of 1-1/4" drill pipe. Pulled out of hole with skirted mill. Ran in hole with over shot. Worked over fish, jarred fish free. Pulled out of hole 42 joints of 1-1/4" drill pipe. Waited on daylight.

8/11/91 Depth: 3488'

Pulled out of hole. Laid down fish, (5 joints 1-1/4" drill pipe and over shot.) Pumped 3 barrel/min down drill pipe and 3 barrel/min down well annulus. Made up bottom hole assembly. Ran in hole with over shot on 1-1/4" drill pipe, filling pipe every 15 joints, tagged fish at 2415'. Attempted to work over fish, pushed fish down to 2787.69'. Pressure on drill pipe increased to 4600 psi at 2 barrel/min, slowed pumping rate to 1/2 barrel/min to cool drill string. Attempted to pull fish, pulled up 17', stuck at 2770'. Pumped down 1-1/4" pipe and 5 " drill pipe, jarred on fish, pumped 6 barrel/min through 1-1/4" drill pipe, came off fish. Pumped down 1-1/4" drill pipe and 5" drill pipe while pulling out of hole, pressure on drill pipe increased to 4200 psi. Cudd unit shut down. Waited on daylight. Pumped 3 barrel/min into well annulus at 953 psi. Shut in pressure on 1-1/4" drill pipe and 5" drill pipe 2000 psi. Pressure on annulus increased to 1800 psi when not pumping into well.

8/12/91 Depth: 3488'

Snubbed out of hole with 1-1/4" drill pipe, recovered center section of Baker bridge plug which was lost in hole. Left rubber parts and stainless steel rings inside 5" drill pipe. Rigged up Baker bridge plug, sheared pin on bridge plug when trying to pass through BOPE stack. Redressed plug, ran in hole with bridge plug on 1-1/4" drill pipe to 1550'. Dropped ball and attempted to set bridge plug. Pulled out of hole with 1-1/4" drill pipe, left bridge plug in hole. Started to rig down Cudd 150 Hydraulic Snubbing Unit, laid down 5" drill pipe from rig derrick.

8/13/91 Depth: 3488'

Installed equalizing valves on BOPE stack to relieve pressure inside stack. Picked up new TIW valve on drill pipe. Tested Hydril to 1200 psi, O.K. Picked up drill string 160,000 lbs, set down to 80,000 lbs. Pipe free in hole, lowered pipe into hole 2 feet and then picked up 7 feet. Pipe free with no drag. Picked up single and set weight on pipe rams. Laid down single. Installed new Hydril rubber (one piece), and installed all new seals. Nippled up Hydril. Tested Hydril to 1500 psi O.K. Continued pumping into well annulus at 6 barrel/min.

8/14/91 Depth: 3488'
Nippled up Cudd Pressure Control 450 snubbing unit and BOPE. Tested BOPE. Repaired leaks as required to get good test.

8/15/91 Depth: 3488'
Froze 5" drill pipe with dry ice to replace TIW valve, which was leaking. Packed dry ice around drill pipe every 15 minutes. Tested freeze at 1600 hours, continued freezing, tested freeze at 1800 hours. Halliburton tested and pumped thick gel into TIW valve, pumped 1/2 barrel, continued freeze. Tested freeze at 2400 hours.

8/16/91 Depth: 3488'
Froze 5" drill pipe, broke out TIW valve and replaced with a 3" full opening TIW valve. Rigged up HLS wire-line services, ran in hole with 2-7/8" gauge ring and collar locator to 1600'. Did not encounter fish at expected depth. Picked up 2-7/8" Magna range plug, ran in hole and set at 1486'. Set 5' of cement on top of plug. Waited on cement for 5 hours. Rigged up Cudd Pressure Control to snub out of hole.

8/17/91 Depth: 3488'
Pressure tested Magna range plug inside drill pipe to 500 psi, O.K. Snubbed 8 joints of drill pipe out of hole, worked tight spot in wellbore at 3179'. Set off jars and pipe came free. Snubbed 50 joints (1557' total) of 5" drill pipe out of the hole. Rigged up and hot tapped drill pipe, bled off pressure. Rigged up to freeze 5" drill pipe.

8/18/91 Depth: 3488'
Froze 5" drill pipe, pressure tested plug to 2200 psi using Halliburton. Plug held O.K., laid out 1 double of 5" drill pipe. Stabbed TIW valve onto drill pipe, rigged up HLS wire line services, ran in hole with 2-7/8" gauge ring, tagged fish at 1185'. Set 2 each Magna range plugs inside 5" drill pipe, bottom at 1183', top plug at 1168'. Pressure tested plug to 1600 psi using Halliburton pumps, plug held O.K. Snubbed and laid out 38 joints of 5" drill pipe. Rigged up to hot tap 5" drill pipe. Found scale on drill pipe up to 1/4" thick, most of the scale was located on the heavy weight drill pipe. Tools remaining in hole: bit, stabilizer, monel, 6 drill collars, shock sub, 6 drill collars, jars, 8 joints HWDP. Pumped water at 3 barrel/min into well annulus at 950 psi.

8/19/91 Depth: 3488'
Hot tapped and froze plug in 5" drill pipe. Laid out 2 joints of HWDP, recovered 2nd Baker inflatable packer. Pulled 1 single and froze pipe. Laid out 1 joint of HWDP. Recovered pieces of Baker plug, wire and junk off of packer. Found 3/8" scale build up inside bottom 15' of HWDP. Rigged up HLS wire-line services to run gauge ring inside 5" drill pipe, gauge ring would not

go because of scale in drill pipe. Rigged down HLS. Snubbed out 2 joints of 5" HWDP. Started freezing pipe. Continued pumping into well annulus at 5 barrel/min at 1012 psi.

8/20/91 Depth: 3488'

Froze heavy wall drill pipe and tested freeze to 2300 psi. Laid out 2 joints of drill pipe, pipe was scaled on the inside with what looked to be silica scale. Installed TIW valve on drill pipe, rigged up Dia-Log and ran 1.9 " feeler gauge inside drill pipe, found restriction at 155'. Restriction is thought to be fish lost in hole. The 155' depth is inside the jars in the drill string. The bit at the bottom of the drill string is now located at 585' Rigged up Cudd Pressure Control 150 Snubbing Unit on top of Cudd 450 Unit.

8/21/91 Depth: 3488'

Rigged up Cudd Pressure Control 150 Hydraulic Unit and BOPE. Tested BOPE and all valves, OK. Tripped into 5" HWDP with 1-1/4" drill pipe and 2-1/2" mill, reamed each joint down and cleaned out scale inside drill pipe. Milled on junk from 192' to 197'. Tripped for mill. Milled on fish from 197' to 197.5' in 3-1/2 hours.

8/22/91 Depth: 3488'

Milled on junk with 2 1/2" Tri-State 3 bladed junk mill from 197.5' to 204'. Tripped for 4 bladed junk mill. Milled from 204' to 369'. Tripped for mill. Milled on junk from 369' to 370'.

NOTE: Junk being milled is inside shock sub, with an I.D. of 2 1/2". Shock sub is 13 1/2 ' long. Once shock sub is cleaned out, it should be possible to run in hole to monel. Have little wear on outer perimeter of mills and good pattern on bottom.

8/23/91 Depth: 3488'

Milled from 370' to 373'. Tripped for mill. Milled from 373' to 576'. Tripped for mill. Circulated. Pulled out of hole. Rigged up HLS wireline and ran 1.90" gauge ring to 582'. Ran inside HWDP with bridge plug on HLS wire line and set plug in monel at 572'. Fluid bled back slowly.

8/24/91 Depth: 3488'

Ran magna range plug in hole on HLS wire line and set plug at 562'. Set a plug third plug at 560'. Tested plugs to 2500 psi. Rigged down Cudd Pressure Control 150 Unit. Snubbed out through 450 Unit, 5 joints of 5" HWDP, cross-over sub, 7 3/4" Daily Drilling jars, and 3 joints of 7 3/4" spiral drill collars.

NOTE: Remainder of tools to lay down, four 8" drill collars, shock sub, cross-over, six 9-1/2" drill collars, monel drill collar, cross-over, stabilizer, and 12 1/4" bit. (337.31 ')

8/25/91 Depth: 3488'
Rigged up to snub out drill collars. Welded angle iron girt in derrick. Started snubbing drill collars out of hole. Laid out four drill collars. Installed TIW valve in top of shock sub. Waited on daylight.

8/26/91 Depth: 3488'
Waited on daylight. Snubbed out shock sub, cross-over, and one 9 1/2 " drill collar. Welded on tong dies to prevent slippage on collars. Changed out Cudd slip dies. Snubbed out three 9 1/2 " drill collars. Secured well and waited on daylight.

8/27/91 Depth: 3488'
Waited on daylight. Snubbed out three 9 1/2" drill collars, monel drill collar, cross-over, near bit stabilizer, and bit. Closed blind rams. Changed rams in BOPE stack to 7". Rigged up to run 7" working string into well to effect kill. Worked on mud pits. Unloaded and strapped 7" casing. Prepared for running it into well.

8/28/91 Depth: 3488'
Waited on daylight. Rigged up and snubbed 20 joints, 802 ', of 7", 29 #, L-80, Buttress T&C casing kill string into well. Kill string has 2 float collars installed one joint from bottom and a profile nipple installed, one joint up from float collars. Secured well and waited on daylight.

8/29/91 Depth: 3488'
Resumed running 7" casing at 0700 hours. Ran 7" casing to 2124 ft, installed safety valve on top of 7" casing and secured well. Worked on piping manifold, mud tanks and mud lines. Moved in Halliburton frac truck and hooked up 3" injection lines. New water well is supplying 16 barrels/min to rig site.

8/30/91 Depth: 3488'
Rigged up mud lines, resumed running 7" kill string and tagged fill at 3468'. Reciprocated 7" kill string at 3375'. Pulled up and laid out two joints 7". Rigged up kill lines to Halliburton frac head on top of 7" casing. Continued hooking up kill manifold. Started pumping 17 barrels/min down kill string and 4 barrels/min into annulus. Annulus pressure 1020 psi.

8/31/91 Depth: 3488'
Rigged up and started pumping water down 7" kill string and into well annulus. PDC pump #1-113 SPM and pump #2-115 SPM down 7" casing. Pressure on

casing 1657 psi at 19 barrels/min. Pumped into well annulus with Halliburton at 5 barrels/min and 793 psi. Continued building mud lines and manifolds. Hooked up water lines to frac tanks. Mixed Baroid mud to 12.2 #/gal, mixed 400 barrels.

9/01/91 Depth: 3488'

Pumped 16 barrels/min at 1390 psi with rig pumps down 7" kill string. Halliburton pumped 5 barrels/min down well annulus at 850 psi. Rigged up HLS wireline services and ran Kuster pressure/temperature survey to 3300'. Ran survey at 500 ft intervals to 2000 ft, ran survey at 100 ft intervals from 2200 ft to 3300'. Pulled up to 3280 ft and pumped into the well at various rates with Halliburton pumps. Pumped at 5 barrels/min for 15 minutes, 10 barrels/min for 15 minutes, 15 barrels/min for 15 minutes, and 20 barrels/min for 5 minutes. Let tool set on bottom for 10 minutes with no injection down 7" kill string. Pulled out of hole with pressure/temperature tool. (See Pruett Industries Report of 9/01/91 to view details of pressure/temperature survey.)

9/02/91 Depth: 3488'

Pumped 9 barrels/min at 895 psi down 7" kill string, and 4 barrels/min at 950 psi down well annulus. Started pumping at 3:45 PM with #1 Rig pump, 6.8 barrels/min, 720 psi into well annulus. And at 4:00 PM with #1 Yard pump and Halliburton pumps pumped down 7" kill string at 30 barrels/min at 2600 psi. From 4:00-5:00 PM, the #1 Yard pump and Halliburton pumps pumped down 7" kill string at 31 barrels/min at 2600 psi. Rig pumps pumped into annulus at 6.8 barrels/min and 515 psi. Shut down high rate pumps at 6:15 PM. Pumped with 2 yard pumps 16 1/4 barrels/min down 7" kill string at 1270 psi and continued pumping into annulus at 6 barrels/min at 753 psi. Water well MW-3 failed and backup water supply was brought on line. Repaired MW-3 and came back on line. Continued pumping at 2400 hours.

9/03/91 Depth: 3488'

Pumped 4 barrels/min down well annulus and 5 barrels/min down 7" kill string. Increased rate to 6 barrels/min on well annulus and 31 barrels/min down 7" kill string. Spotted 12#/gal mud on bottom and around annulus, pressure on the annulus dropped to 271 psi, mud temporarily stopped flow from lower zone, but after 10-15 minutes flow resumed. Resumed pumping with cold water down 7" kill string and down well annulus.

9/04/91 Depth: 3488'

Pumped cold water at 5 barrels/min into well annulus and 20 barrels/min down 7" kill string to cool well. Pumped 500 barrels of 12#/gal mud down 7" kill string at 32 barrels/min at 2565 psi and continued pumping into annulus at 5 barrels/min with cold water. Followed by 500 barrels of 18#/gal mud, then pumped 125 cubic ft of Hawaiian cement containing 40% silica flour, 1:1 perlite,

4% gel, 1.57% CFR-3, 1% Diacel, and 1% HR-15, pumped cement at 3 barrels/min. Displaced cement with 5 barrels of mud followed by 120 barrels of water. Cement in place at 12:55 PM. WOC for 4 hours. Bled off pressure, rigged down circulating head and picked up 200 Ton elevators. Worked pipe down and picked up to 75,000 - 80,000 lbs. Pipe moved free. Rigged up circulating head. Mixed barite and gel to a mud weight of 12 ppg, mixed 400 barrels of 18 ppg mud.

9/05/91 Depth: 3488'

Pumped down 7" kill string at 10 barrels/min and down well annulus at 2 barrels/min. Attempted to bleed off pressure on backside. Well temperature at 192 deg. F through choke with CO2, shut in on choke. Continued pumping 5 barrels/min on well annulus and 7.5 barrels/min on 7" kill string. Pumped 250 barrels of 14 ppg mud and shut down pumping. Well remained static on bottom for 11 minutes and then pressure began to increase. Pumped away 14 ppg mud with water. Continued pumping into well annulus at 5 barrels/min. and down 7" kill string at 10 barrels/min. while mixing mud. Mixed 470 barrels of 15.1 to 15.5 ppg mud.

9/06/91 Depth: 3488'

Pumped 250 barrels of 15.1 ppg mud down 7" kill string, followed by 130 cubic ft of Hawaiian cement with 40% SSA-1, 1:1 perlite, 4% gel, 1.5% CFR-3, 1% LWL and 2.5% HR-15, plus 260 cubic ft Hawaiian cement with, 40% SAA-1, 1:1 perlite, 1.5% CFR-3, 3% LWL, and 7.5% HR-15. Displaced cement slurry with 125 barrels of water. Cement in place at 0325 hours. Shut in pressure on 7" kill string 510 psi. Had 193 psi on well annulus while pumping 7.6 barrels/min. cold water into annulus. Waited on cement. Annulus pressure decreased to 14 psi at 0500 hours. Rigged up wireline and ran temperature/pressure survey. Ran to top of floats in 7" kill string at 3332 ft KB measurement. Temperature on bottom was 633 degree F. Waited on cement. Reran pressure/temperature survey to 3300'. Rigged down wireline services. Rigged down circulating head. Latched on to 7" casing, pulled slips with 212000 lb. Slacked down to 75000 lb and pulled up to 200,000 lb, with 11.5' of stretch. Rigged up 7" swage nipple and 2" hoses. With 7" in elevators, string weighed 75,000 lb. Pumped down 7" kill string at 1/2 barrels/min. and 850 psi.

9/07/91 Depth: 3488'

Pumped cold water at 1 barrels/min. through 7" kill string at 531 psi. Pumped cold water at 8 barrels/min. into well annulus at 5 psi to cool well. Rigged up and moved kill string to determine free point. The 7" casing is free to the 13-3/8" shoe. Halliburton mixed and pumped 190 cubic ft Hawaiian cement mixed 1:1 with perlite, 40% silica flour, 4% gel, 1.5% CFR-3, 1% Diacel, and 1% HR-15. (Slurry weight 13.45 ppg). Displaced cement with 126 barrels of water, cement in place at 1215 hours. Shut in pressure 790 psi. WOC 8 hours.

Attempted pressure buildup against plug, pressure did not hold. Rigged up and pumped 10 barrels/min down 7" kill string at 644 psi and 4 barrels/min into well annulus at 3 psi to cool well bore.

9/08/91 Depth: 3488'

Ran pressure/temperature log to 3300'. When running in hole pumped 4 barrels/min. into well annulus and nothing into 7" kill string. At 3300 ft set logging tool for 10 minutes, started pumping down 7" kill string at 10 barrels/min. and logged out of the hole using identical stops. Continued pumping into annulus at 4 barrels/min.. Picked up HLS 7" lubricator to run CBL log. Continued pumping cold water at 3.4 barrels/min. into well annulus. Pumped down 7" kill string at 10 barrels/min. at 865 to 995 psi.

9/09/91 Depth: 3488'

Worked on Halliburton Logging Services 7" lubricator. Ran CBL log from 3300 ft to surface. Had good cement behind 7" kill string from 2100 ft to 2670 ft, fair cement from 2670-2770'. Pumped down annulus at 5 barrels/min. and down 7" kill string at 5 barrels/min.. Pumped 125 barrels of 15.5 ppg mud down 7" kill string followed by 250 cubic ft of Hawaiian cement with 40% SSA-1, 1.2% CFR-3, 1.25% Halad 22A and 1% LWL (yield 1.62 cubic ft/sx). Displaced cement with 180 barrels of water at 10 barrels/min.. Rigged up HLS wire-line services to set bridge plug. Pumped 120 barrels of 15.1 ppg mud into 7". Ran in hole and set bridge plug in 7" casing at 3222' Pulled out of hole with wire line. Filled hole with mud until pressure increased to 300 psi and then shut well in. Rigged down HLS, opened kill string valve and had 1872 psi on 7" casing. Shut in, reopened valve and had zero psi on 7" casing. Pumped 200 barrels of 15.1 ppg mud into 7" casing.

9/10/91 Depth: 3488'

Pumped 5.3 barrels/min. into well annulus, pumped 1.2 barrels/min. into 7" kill string at 500 psi. Rigged up Halliburton Wireline Services, rigged up Halliburton Cementing Services, pumped 20 barrels of 15.1 ppg mud, 5 barrels water, and 100 cubic ft of cement. Dropped following plug and displaced cement with 121 barrels of 15.1 ppg mud and 2 barrels of water. Pressure on kill string increased to 500 psi. Held pressure on 7" kill string, pressure increased to 1000 psi and then decreased to zero. Started pumping water at 2 barrels/min. down 7" kill string, increased rate to 7.5 barrels/min. at 2000 psi. Mixed barite weighted mud to 13 ppg, mixed a total of 200 barrels. Halliburton pumped down 7" kill string 50 barrels 13 ppg mud, 10 barrels water followed with 100 cubic ft Hawaiian cement with 1:1 perlite, 40% silica flour, 4% gel, 1% Diacel, 1% LWL, 1% HR-15, 1.5% CFR-3, (yield 13.4 ppg). Dropped top plug, pumped 3 barrels of cement on top of plug and 2 barrels of water. Displaced with 116 barrels of 15.1 ppg mud. Pumped plug with 700 psi, cement in place at 1655 hours. Opened valves to Howco tanks and monitored 4 barrels flow back. Waited on cement 4

hours. Tested plug to 200 psi, OK. Rigged up Halliburton Wireline Services, ran and set 7" bridge plug at 2877 ft. Picked up bailer and set one bailer of cement on top of bridge plug at 2877'.

9/11/91 Depth: 3488'

Waited on cement. Tested plug inside of 7" kill string to 200 psi for 15 minutes O.K. Rigged up and ran free-point indicator on 7" kill string. Ran in hole with Dia-Log back-off shot, torqued pipe, successfully backed off 7" at 2060'. Pulled and laid down one joint of 7" casing. Landed 7" kill string in bottom set of 7" pipe rams above top of 7" casing. Laid down second joint of 7" casing and closed blind rams. Nippled down Cudd and BOPE. Installed flow line and repaired rig floor.

9/12/91 Depth: 3488'

Rigged up to pull 7" casing. Picked up 7" and stabbed into work string. Pulled 21 joints of 7" casing. Well started flowing soft. Shut well in and killed well with two rig pumps at 95 strokes per minute each at 800 psi down well annulus. Well went on vacuum after pumping cold water, vacuum was 7 psi. Nippled down flow line and nippled up Cudd snubbing unit and BOPE. Tested BOP stack to 700 psi. Stripped out of hole with 7" casing. Laid out the remainder of the 7" kill string (32 joints). Pulled from well a total of 53 joints of 7", 29#, L-80 BTC casing. Pumped cold water into well at 414 psi and 5.8 barrels/min.. When pump is shut off well returns to vacuum.

9/13/91 Depth: 3488'

Changed pipe rams. Ran in hole with 5 " drill pipe to 1813'. Closed pipe rams and pumped cold water to cool hole. Halliburton mixed and pumped 20 barrels 10% calcium chloride water, followed by 2 barrels of water, followed by 50 barrels of Superflush, followed by 2 barrels of water, followed by 20 barrels of calcium chloride water, followed by 2 barrels of water, followed by 50 barrels of Superflush, followed by 2 barrels of water, followed by 250 cubic ft of Hawaiian cement with 40% SSA-1, 50 pounds per sack spherelite, 4% gel, 1.25% CFR-3, and 2% calcium chloride. (Density 11 ppg, yield 3.40 cubic ft/sk, water 11.22 gal/sx), Followed cement with 2 barrels H2O, 17 barrels calcium chloride, 2 barrels H2O, 20 barrels of Superflush, and 5 barrels of H2O. Final squeeze pressure 800 psi bleeding to 200 psi. Cement in place at 2010 hours. Pulled out of hole 10 joints of drill pipe. Waited on cement.

9/14/91 Depth: 3488'

Waited on cement. Stripped 5 " drill pipe into hole, tagged cement at 1903'. Tested cement plug to 1000 psi, pressure bled off slowly. Circulated water to cool well bore. Tested cement plug to 1000 psi for 15 minutes, O.K. Prepared to cement inside 13 3/8 " casing. Hung drill pipe at 1877 ft, Halliburton pumped 10 barrels of water, mixed and pumped 56 sacks Hawaiian cement with

40 % silica flour, 1.25% CFR-3, .5% Halad 22A, and 3% gel (16.2 ppg). Displaced cement slurry with 2.5 barrels of water followed with 28 barrels of mud, cement in place at 0228 hours. Pulled 5 joints of 5" drill pipe and tested plug to 1000 psi for 15 minutes O.K. Laid down 5" drill pipe. Filled hole with mud and closed blind rams, nippled down Cudd Pressure Control.

9/15/91 Depth: 3488'
Nippled down Cudd Pressure Control. Tore out BOPE and cleared well cellar.

9/16/91 Depth: 3488'
Cut off 13 3/8" Series 900 well head, dressed 13 3/8" casing for new well head. Installed new 13 3/8" Series 1500 well head, pre-heated 13 3/8" casing and well head with hot-head. After welding on casing head, cooled well head at controlled rate. Tested new 13 3/8" well head to 1400 psi for 15 minutes, O.K. Set BOPE equipment on top of casing head and started to nipple up same.

9/17/91 Depth: 3488'
Nippled up BOPE. Laid down rig derrick. Installed "monkey board". Raised derrick. Rigged up floor and continued to nipple up BOPE stack.

9/18/91 Depth: 3488'
Picked up kelly. Tested blind rams to 1000 psi, pressure fell off to 970 psi in 30 minutes. Replaced kelly hose. Washed rat hole pipe down to bottom. Picked up HWDP with plugs set inside, broke and laid down HWDP. Picked up bottom hole assembly.

9/19/91 Depth: 3488'
Ran in hole. Tested all BOPE, lines and valves. Test O.K. Test witnessed and approved by Eric Tanaka with the State of Hawaii, DLNR. Ran in hole and tagged top of cement at 1758 ft. Cleaned out cement to 1772 ft. Pulled 2 stands and installed test plug in well head. Retested BOPE as directed by the state of Hawaii. Test witnessed and approved for second time by Duey Milner , State of Hawaii representative of DLNR. Laid down test plug and ran in hole, cleaned out cement from 1772' to 1793 '

9/20/91 Depth: 3488'
Drilled cement from 1793' to 2071', circulated hole clean. Pulled out of hole with drilling assembly. Made up 6" tapered mill and bottom hole assembly. Tripped in hole, drilled cement from 2071' to 2073'. Washed down to 2132'. Circulated hole clean. Pulled out of hole.

9/21/91 Depth: 3488'
Made up 10-3/4" wash over pipe and ran in hole. Milled on 7" collar at 2071', unable to wash over 7" casing. Pulled out of hole. Made up 6" tapered mill and

ran in hole. Polished off lip on 7" collar at 2071'. Circulated hole clean and pulled out of hole.

9/22/91 Depth: 3488'
Picked up 6-1/8" mill. Tripped in hole. Milled on top of 7" casing at 2071'. Tripped out of hole. Picked up 13-3/8" casing scraper and bit. Tripped in hole breaking circulation at intervals. Tagged top of 7" casing at 2072 ft.

9/23/91 Depth: 3488'
Circulated hole clean and pulled out of hole laying down 8" drill collars and tools. Rigged up and ran 236.25 ft of 7", 29# L-80, Buttress casing with wicker sub on bottom. Screwed wicker sub into 7" casing top at 2072'.

9/24/91 Depth: 3488'
Backed off 7" casing at 1872 ft. Tripped out of hole, laid down casing DRIVE sub. Tripped in hole. Tagged 7" at 1872 ft. Pumped viscous pill on bottom. Tripped out of hole. Rigged up and ran 9 5/8" casing. Worked over top of 7" casing. Ran 9 5/8" casing to 2071.99 ' Circulated through casing. Lifted BOPE stack.

9 5/8" CASING DESCRIPTION:

37.56 FT,	1 JOINT,	9 5/8"	47#	C-90 BUTT CSG.
0.0 FT,	-	INSERT FLOAT COLLAR		
37.82 FT,	1 JOINT,	9 5/8"	47#	C-90 BUTT CSG.
0.0 FT,	-	INSERT FLOAT COLLAR		
2028.37 FT.	53 JOINTS,	9 5/8"	47#	C-90 BUTT. CSG.
2103.75 FT.	55 JOINTS,	TOTAL CASING		
-31.76 FT.	CASING ABOVE ROTARY TABLE			
2103.75 FT	FINAL HANGING DEPTH			

9/25/91 Depth: 3488'
Installed centering ring and nippled up BOPE. Circulated hole clean. Cemented 9 5/8" tie-back as follows: Halliburton mixed and pumped, 5 barrels of water followed by 1020 sacks (1560 cubic ft) Hawaiian cement, mixed with 40% SSA-1, 3% gel, and 1.25% CFR-3. Dropped plug and displaced cement with 137 barrels of water. Cement in place 0910 hours. Had approximately 70 barrels of cement returns to surface during displacement. Waited on cement. Tore out BOPE and cut off 9 5/8" casing. Installed 9 5/8" expansion spool.

9/26/91 Depth: 3488'
Laid down expansion spool, waited on repair of expansion spool. Bolt holes of expansion spool were not the correct size for the 10" Series 1500 valve. Installed expansion spool and nippled up BOPE. Tested expansion spool, unable to obtain

good test. Nippled down BOPE and removed expansion spool. Installed new packing in expansion spool.

9/27/91 Depth: 3488'
Reinstalled and tested expansion spool, had severe leak-off of pressure. Nippled down expansion spool and used emery cloth to polish 9 5/8" casing. Reinstalled and repacked expansion spool to 5500 psi with packing material. Tested expansion spool to 2400 psi with nitrogen for 30 minutes. Test O.K. Installed Master valve and nippled up BOP stack.

9/28/91 Depth: 3488'
Tested master valve and casing, pressure went from 2247 psi to 2209 psi in 15 minutes, test O.K. Tested all BOPE, O.K. Cleaned out inside 9 5/8 " casing to 1872 ft, circulated hole clean. Tested liner lap, pressure went from 1155 psi to 1104 psi, tested O.K. Tripped out of hole with drilling assembly.

9/29/91 Depth: 3488'
Ran in hole with 6" bit on 3-1/2" drill pipe. Cleaned out cement from 1872' to 1913'. Cleaned out sporadic cement stringers to 2881'. Circulated hole clean, tested 7" casing to 475 psi. Casing pressure increased to 765 psi in 4 minutes. Pulled out of hole and had a 26 barrel increase in mud volume, expansion due to rise in temperature. Ran pressure/temperature survey from rotary table KB to 2870'.

9/30/91 Depth: 3488'
Rigged down wireline unit. Tripped in hole. Laid down 4-1/2" and 3-1/2" pipe and drill collars. Broke out kelly. Ran pressure temperature survey to 2870'. Closed master valve on Well KS-8 at 1100 hours 9/30/91. Well secured to 2800' per Bill Rickard, Drilling Superintendent PGV. Cleaned mud pits and shaker tanks, cleaned yard pits. RELEASED PDC RIG 231, 1200 HOURS 9/30/91. Rig on standby rate with crews.

WELL WAS TEMPORARILY SUSPENDED AWAITING REISSUANCE OF PERMITS:

10/01/91 Depth: 3488'
Laid down derrick, changed out seals in swivel. Worked over Cameron single gate BOP, cleaned on rig #231.

10/02/91 - 2/27/92 Waited on permits.

2/28/92 Depth: 3488'
Rig on standby with crews. First week of well control school over with.

3:00 p.m. 2/28/92 - Received permit back; started calling hands back.

2/29/92 Depth: 3488'
Rig on standby until 8:00 a.m. Ran fluid level gauge; fluid at 520'. Filled hole with water (38 barrels). Fluid dropped 8-12' in 30 minutes. Changed out master valve. Nippled up BOPE.

3/1/92 Depth: 3488'
Nipple up and work on new BOP stack. Protesters from off the site took over the rig from 1500 Hrs. to 1515 Hrs.

3/2/92 Depth: 3488'
Rigging up blooie line and choke lines.

3/3/92 Depth: 3488'
Rigging up water lines and blooie lines, reset site muffler.

3/04/92 Depth: 3488'
Nippled up blooie line. Ran pressure and temperature survey. Unable to pass 1705 ft. Results as follows:

DEPTH (FEET)	PRESSURE (PSIG)	TEMP (°F)
200	22.7	92.9
400	107.3	92.9
600	193.7	99.8
800	275.4	92.9
1000	364	92.9
1200	449.4	92.9
1400	539.3	96.7
1600	623.3	135.8
1700	670.5	225.0

03/5/92 Depth: 3488'
Ran electro-magnetic caliper log to obstruction at 1700' . Ran multiarm caliper log to 1700 ' Nippled up rotating head and flow lines. Tested BOP stack and choke manifold to 2000 psi. OK. BOP test witnessed and approved by DLNR representative Eric Tanaka.

03/6/92 Depth: 3488'
Rigged up Tecton, Blooie line, and injection lines. Made up 8 1/2 " bit and ran in hole. Washed minor scale from 1700 ' to 1872 ' and circulated hole clean. Pulled out of hole.

03/7/92 Depth: 3488'
Made up 6 inch bit and ran in hole to 2900 ft. Ran temperature survey. Pressure tested casing and liner to 2000 psi. Pressure bled to 600 psi during pressure test. Worked tight pipe from 2900' to 2865' and then pulled out of hole. Well tried to flow when pulling out of hole. Shut in well and pressure built up to 500 psi. Made up 9 5/8" casing scraper and tripped in hole through rotating head. Scrapped casing to 1872'. Circulated through choke line as gas (CO2) increased to 14000 units.

03/8/92 Depth: 3488'
Circulated out hot water and gas. Pulled out of hole and secured rig for anticipated protest. Protest was relatively quiet. Made up 7" casing scraper and ran in hole, circulated hole clean at 1968'. Scraped 7" casing to 2500', and circulated hole clean through choke line. Scraped 7" casing to 2844' and pulled to 2500'. Circulated hole clean and pressure tested casing to 650 psi. Pressure bled down to 450 psi in 15 minutes and lost 7 barrels. of fluid. Pulled out of hole.

03/9/92 Depth: 3488'
Rigged up and ran a pressure/temperature survey to 2939'.

DEPTH, FEET	TEMPERATURE, ^{O}F	PRESSURE, PSIG
500	113.5	225
1000	127.9	443
1500	159.4	658
1900	193.7	803
2000	489.1	828
2100	515.1	846
2200	518.4	865
2300	519	881
2400	520.9	902.1
2500	522.4	914.4
2600	524.5	
2700	526.6	947.1
2750	529.1	
2800	530.6	
2825	531.5	
2839	532.7	961

Ran 7" RTTS to 2191' and tested backside to 700 psi. Pressure fell off. Tested down tubing and pressure test was good. Reset packer and retested to find leak. Located leak in wicker sub in 7" casing at 2072'. Pulled out of hole and laid down tools. Secured well.

3/10/92 Depth: 3488'
Made up 9-5/8 " RTTS and ran in hole to 1811 ft. Circulated hole clean. Set RTTS at 1811 ft. Pressured up backside to 600 psi. Halliburton pumped 595 cubic ft of water ahead at 1200 psi and 3-1/2 barrels/min. followed by 112 cubic ft of lime water; mixed and pumped 324 cubic ft. of Hawaiian cement, premixed with 40% SAA-1, 2% gel and 1.5% CFR-3. Pressure started building to 1800 psi. Displaced cement with 31 cubic ft. of water. Shut down with pressure at 2100 psi, stopped pumping. Pulled RTTS loose and reversed out 37 cubic ft. of cement. Cement in place at 1222 Hrs. Pulled up to 1528' and circulated hole clean. Set RTTS and pressured up to 1000 psi. Held pressure for 2 hours. Pulled out of hole and waited on cement.

3/11/92 Depth: 3488'
Waited on cement. Ran in hole with 8-1/2" bit. Cleaned out cement from 1839' to 1871'. Circulated hole clean, pulled out of hole. Ran in hole with 6" bit, cleaned out cement from 1871' to 2033'. Cleaned out cement from 2033' to 2095' while maintaining 400-600 psi back pressure with Hydril. Circulated hole clean.

3/12/92 Depth: 3488'
Pressure tested casing to 1250 psi surface pressure, OK. Pulled out of hole. Laid down 5" drill pipe and big drill collars. Ran in hole and hung drill pipe in bottom pipe rams with bit at 1801'. Rigged up Cudd 450 snubbing unit and BOPE.

3/13/92 Depth: 3488'
Finished rigging up. Pressure tested BOPE, OK.

3/14/92 Depth: 3488'
Pulled out of hole. Ran pressure/temperature survey with results as follows:

DEPTH, FEET	PRESSURE, PSIG	TEMPERATURE, °F
700	267	112
1000	402	102
1500	621	110
1800	748	274
1850	769	298
1900	787	301
1925	797	310
1950	805	329
1975	812	350
2000	830	359
2025	882	357
2050	844	347
2075	857	343
2100	867	343
2110	871	350

Rigged up super choke and repaired power tong unit. Ran in hole with 6 " bit.

3/15/92 Depth: 3488'
Ran in hole with 6" bit. Washed through tight spot at 2062'. Cleaned out cement stringers from 2062' to 2196'. Pumped viscous sweep and cleaned out to 2197'. Unable to pass 2197'. Pulled out of hole. Rigged up HLS and ran temperature survey, four arm caliper survey and electromagnetic caliper survey. Made up 6-1/8" tapered mill and ran in hole. 7" casing appears to have a slight lip down to 5 3/4" at 2197', this was interpreted from the caliper survey.

3/16/92 Depth: 3488'
Ran in hole, polished off tight spots from 2191' to 2216' and from 2295' to 2301'. Pumped viscous pill and circulated hole clean. Pulled out of hole. Ran in hole with 5" and 5 3/4" gauge rings to 2753' Found tight spots at 2319', 2321', 2326', and 2336'. Ran in hole with 6" bit to 2300'. Swept hole clean and samples were 80% basalt from formation.

3/17/92 Depth: 3488'
Drilled on junk at 2308' for 1-1/2 hours. Swept hole clean and tripped out of hole. Rigged up wireline and ran 5" gauge to 2303'. Pulled out of hole and recovered a piece of steel which was 1" by 8". Ran 5" wireline gauge to 2325'. Pulled out of hole with wireline, hung up at 2303'. Worked gauge free and pulled out of hole. Picked up 3-1/2" drill pipe and tripped in hole. Tagged up at 2303' and worked pipe through tight spot. Tripped in hole to 2744'. Washed from 2744' to 2838' Circulated hole clean. Rigged up HLS lubricator on drill pipe.

3/18/92 Depth: 3488'

Ran HLS temperature survey through 3 1/2" drill pipe at 2834' with 550 psi on well. Rigged down HLS, pulled 8 joints of drill pipe to 2589' Circulated and cooled well. Ran temperature tool to 2300', tools malfunctioned. Repaired tools and reran to 2300'. Tool failed. Pulled out of hole, rigged down wireline unit. Ran a temperature traverse with Pruett Industries suck line tools, results follow:

TIME, (HRS)	0500-0714	0714-0907	0923-1056
DEPTH (FT)	TEMP (^{O}F)	TEMP (^{O}F)	TEMP (^{O}F)
500	150		
1500	170		
2000	191	173	
2200	195	159	
2400	251	298	374
2600	341	587	590
2800	601	598	599
2835	606-605	599-603	601

3/19/92 Depth: 3488'

Waited on casings swages, kept hole full and cooled well with rig pumps. Ran HLS temperature survey to 2297'. Temperature was 147 degree Fahrenheit. Cooled well and ran CIT log from 2294' and ran CBL log to 2298'. Good cement from 2200' to 2130'. Kept hole full by pumping water with rig pumps.

3/20/92 Depth: 3488'

Waited on casing swages. Kept hole full by pumping water. Made up casing wedges and ran in hole.

3/21/92 Depth: 3488'

Ran in hole with 6" casing swage. Encountered steam bubble at 1835'. Had steam flow through drill pipe for 16 seconds until drill string float seated. Steam flow through drill pipe caused loud noise. All systems actuated and well closed in less than one minute. No hydrogen sulfide release recorded at monitoring stations. Had strong flow and some steam through 4" line before HCR valve closed. Did not detect release of hydrogen sulfide. Started pumps at 0224 Hrs. Well cooled immediately. Had no volume increase at pits. Continued to cool well. Ran in hole to bridge at 1867'. Ran pressure temperature survey as follows:

DEPTH (FT)	TEMPERATURE (°F)	PRESSURE (PSIG)
500	107	158
1000	118	374
1400	144-150	551
1600	198	623
1800	348	711

Circulated to cool well. Pulled out of hole and ran in hole with cut lip single. Circulated at 1150'. Ran in hole and cleaned out cement cuttings from 1867' to 1877'.

3/22/92 Depth: 3488'

Washed and reamed from 1877' to 1939'. Ran in hole to 2304'. Washed and reamed and attempted to get through tight spot. Circulated and swept hole at 2304'. Unable to pass. Circulated hole clean and pulled out of hole. Picked up bottom hole assembly and 6" swage and ran in hole to 1298'. Circulated bottoms up. Ran in hole to tight spot at 2200'. Swaged casing from 2200' to 2204'. Ran in hole to 2300'. Swaged casing from 2300' to 2305'. Circulated hole clean. Pulled out of hole and laid down swage. Picked up bottom hole assembly and ran in hole.

3/23/92 Depth: 3488'

Ran in hole with 5-3/4" tapered mill and 5-7/8" string mill. Polished off tight spots at 2200' to 2205' and 2232' to 2256'. Ran in hole to 2304'. Milled with tapered mill to 2307'. Pumped sweep at 2307'. Pulled out of hole. Picked up mud motor. Ran in hole with 6" concave mill and stabilized bottom hole assembly (two stabilizers immediately above down hole motor).

3/24/92 Depth: 3488'

Ran in hole to 2200', worked at tight spot, pulled out of hole and changed floats. Ran in hole with concave mill to 2212'. Milled without progress, circulated bottoms up and pulled out of hole. Picked up bottom hole assembly and ran in hole to 914'. Well started to flow at 914'. Shut in well and pumped into annulus with 53 SPM at 535 psi. Hole taking fluid at 425 psi. Pumped 2 hours at 40 SPM and 400 psi. Well on vacuum, ran in hole.

3/25/92 Depth: 3488'

Continued to run in hole with string mill to 2193' and polished off tight spot from 2193' to 2202'. Ran in hole and tagged up at 2307'. Pulled out of hole to tight spot tagged. Polished off with string mill from 2225' to 2237'. Shut well in and checked for flow, no flow. Ran in hole to 2304'. Pumped sweep around and pulled out of hole. Ran in hole with mud motor. Milled tight spot from 2294' to 2298'. Returns indicated that mill was milling up new formation.

3/26/92 Depth: 3488'
Milled tight spot from 2298' to 2302.5'. Encountered void of 4". Started time drilling with mill on mud motor from 2303' to 2304'. At 2304' mill went inside 7" casing. Ran in hole to 2460', circulated and swept hole. Pulled out of hole. Picked up cut lip single on 3 1/2" drill pipe and ran in hole to top of 7" casing at 2304'. Worked drill pipe inside of 7" casing to 2318'. Circulated and cleaned out to 2341'. Circulated out bird's nest cuttings.

3/27/92 Depth: 3488'
Washed and cleaned out from 2341' to 2537'. Pulled out of hole to 2466'. Halliburton and mixed and pumped 21 cubic ft cement through drill pipe. Displaced cement with 16.2 barrels of water. Cement in place at 0835 Hrs. Pulled out of hole. Picked up bottom hole assembly. Ran in hole to 2303' and worked through bad spot. Ran in hole to top of cement at 2342'. Circulated hole clean and pulled out of hole.

3/28/92 Depth: 3488'
Pulled out of hole and found bit had been lost in well. Ran in hole with open ended pipe on stabilizer and attempted to screw into bit. Pulled out of hole without bit. Pick up lip joint 3-1/2" drill pipe and ran in hole. Circulated bottoms up and Halliburton pumped through open ended drill pipe at 2526', 10 barrels water, 10 barrels lime water, and then 31.5 cubic ft of Hawaiian cement with 40% silica flour, 1.5% CFR-3, and 2% gel mixed to 15.5 ppg slurry weight. Displaced cement with 16.8 barrels of water. Cement in place at 2126 Hrs. Pulled out of hole to 2340', circulated and waited on cement.

3/29/92 Depth: 3488'
Waited on cement. Ran in hole to cement at 2363'. Pulled out of hole. Ran in hole with 7" RTTS and set tool at 2039'. Pressured up backside with 400 psi. Checked break down rate at 5 barrels/min. at 500 psi. Halliburton pumped 100 cubic ft lime water ahead followed by 553 cubic ft Hawaiian cement premixed with 40% silica flour, 2% gel and 1.5% CFR-3. Displaced cement with 78 cubic ft. of water. Released RTTS and pulled up to 1700 ft. Circulated out 5 cubic ft. excess cement. Cement in place at 1745 Hrs. Final shut in pressure 1000 psi. Pulled out of hole and waited on cement.

3/30/92 Depth: 3488'
Waited on cement. Ran in hole. Cleaned out cement stringers from 1964' to 2079'. Cleaned out hard cement from 2079' to 2209'. Tested casing to 1500 psi OK.

3/31/92 Depth: 3488'
Reamed bad spot in 7" casing with string mill from 2209' to 2317' Tested casing to 500 psi OK. Cleaned out 7" casing to 2526'. Pulled out of hole.

4/01/92 Depth: 3488'
Ran in hole with 6" concave mill. Cleaned out inside 7" casing to 2526'. Washed down with very little drag to 2844'. Flow line temperature increased from 93 to 119 degree Fahrenheit at 2844'. Dyna drill quit, unable to circulate through tool. Pulled out of hole, tight from 2844' to 2751'. Pulled out of hole, laid down Dyna Drill, picked up bottom hole assembly. Tripped in hole to 1872' and circulated bottoms up. Flow line temperature increased to 127 degree Fahrenheit. Had no drill pipe drag when going through cemented zone at 2304'.

4/02/92 Depth: 3488'
Displaced casing at 2800' with calcium chloride water. Ran pressure-temperature survey inside drill pipe to 2800'. Maximum temperature recorded was 631 degrees Fahrenheit and maximum pressure was 1705 psig. There is a positive indication of cross flow in the bottom of the well. Pulled out of hole to 2490'. Circulated and cooled well.

4/03/92 Depth: 3488'
Tripped in hole with 6" mill, tagged up at 2788'. Washed down to 2883'. Milled on junk from 2883' to 2906', pushing junk ahead of the mill. Circulated to cool hole, flowline temperature increased to 209 degree Fahrenheit. Pulled out of hole. Tripped in hole with magnet to 2906'. Worked magnet. When on bottom with magnet the Health Department called and said noise level decibels were at 46 and PGV was in violation. Shut down mud cooler, unable to cool circulating fluids properly. Pulled out of hole, well started to flow back through drill pipe and annulus. Tripped in hole to circulate and cool the well.

4/04/92 Depth: 3488'
Circulated and pulled out of hole. Had no recovery on 6" magnet. Reran magnet on 6" stabilized bottom hole assembly to 2826'. Circulated to cool well. Washed to bottom, maximum recorded temperature while circulating was 193 degree Fahrenheit. Bottom hole temperature increased to 324 degrees Fahrenheit in 20 minutes when circulation stopped. Temperature increased to 231 degrees Fahrenheit at 2600' in 45 minutes.

4/05/92 Depth: 3488'
Washed to 2891' with magnet, circulated and cooled well. Worked magnet at 2906', pulled out of hole with magnet. Recovered one quart of various pieces of metal (iron slivers and small gravel size pieces). Ran in hole with open ended drill pipe and circulated at 2814'. Spotted viscous pill on bottom. Pulled out of hole with wet string. Pumped calcium chloride pill, continued to pull out of hole. Found floats burned up. Changed out pipe rams, rigged up casing crews.

4/06/92 Depth: 3488'

Ran 35 joints of 5", 15#, L-80 SLHC casing as a liner. While running casing, Cudd Pressure Control basket fouled and required repair. Finished running casing, changed pipe rams back to 3-1/2". Tripped in hole with 5" liner on 5" by 9-5/8" liner hanger to 2170', hole tight, worked and washed pipe to 2626'.

NOTE: Temporary restraining order was served today. Under restraining order, will be allowed to finish cementing and drilling out the 5" inner liner, but perforating and squeeze cementing the 7" liner will be postponed.

4/07/92 Depth: 3488'

Ran in hole with 5" liner on 3-1/2" drill pipe to 2810'. Circulated and cooled hole. Hung 5", 15#, L-80, SLHC casing with shoe at 2808', float collar at 2763', latch in collar at 2719' and top of 9-5/8" by 5" liner hanger at 1381'. Circulated and cooled hole. Cemented as follows: mixed and pumped 20 barrels sepiolite with silica flour flush mixed to 13.5 lbs/gal, 214 cubic feet Hawaiian cement with 40% SSA-1, 1.75% CFR-3, 1.25% H22A, and 1% Diacel, plus 41 cubic feet Hawaiian cement with 40% SSA-1, 1% CFR-3, 3% Diacel LWL and 7.5% HR-15. Displaced cement with 28 cubic feet. sepiolite and silica flour mixed to 13.5 lbs/gal as a spacer and 162 cubic ft. calcium chloride water. Bumped plug at 1130 Hrs. Released hanger. Pulled out of hole. Waited on cement.

5" INNER LINER DETAIL

LENGTH	# JOINTS	DESCRIPTION
1.93'		5" Baker Float Shoe
40.81'	1	5", 15#,L-80, SLHC casing
1.62'		5" Baker double float collar
41.86'	1	5", 15#,L-80, SLHC casing
2.60'		5" Baker latch in collar
1314.93'	33	5", 15#,L-80, SLHC casing
9.40'		5", 15#.L-80, SLHC casing pup joint
13.77'		9 5/8" by 5" Baker "J" slot hanger
1314.93'	35	TOTAL

4/08/92 Depth: 3488'

Tripped in hole with 8-/2" bit to cement at 1378'. Cleaned out to top of liner at 1381'. Circulated. Tripped for 4-1/4" mill, tagged cement stringers at 2401' and 2813'. Cleaned out cement from 2613' to 2719'. Milled up latch in collar at 2719'. Cleaned out cement from 2719' to 2763'. Mixed and pumped sweep, continued cleaning out cement to 2763'. Cement samples appeared to be green, circulated and waited on cement.

4/09/92 Depth: 3488'
Performed pressure test with rig pumps, pressured up to 1000 psi, pressure held at 970 psi. Continued to clean out 5" casing and casing shoe from 2806 to 2808'. Ran in hole to 2906'. Circulated sweeps. Rigged up and ran Pruett temperature survey. Unable to run in drill collars with tools. Had rope socket turned down from 1-1/2" to 1-1/4". Reran temperature survey. The results are as follows:

1 st run		2nd run	
2870'	629°F	2870'	630°F
2800'	632°F	2800'	628°F
2700'	622°F	2700'	610°F
2500'	330°F	2600'	362°F
		2500'	270°F

4/10/92 Depth: 3488'
Pulled out of hole. Shut in well and monitored well head pressure. Well head pressure equals 58 psig. Wait on orders.

4/11/92 Depth: 3488'
Well shut in; monitoring casing pressure. Waiting on orders.

4/12/92 Depth: 3488'
Well shut in. Waiting on orders. Wellhead pressure 150 psig.

4/13/92 Depth: 3488'
Well shut in. Waiting on orders. Wellhead pressure varied from 425 psi to 455 psi.

4/14/92 Depth: 3488'
Well shut in. Waiting on orders. Bled 1/4 barrel fluid to keep surface pressure less than 500 psi at 0830 hrs and 2000 hrs.

Wellhead pressure data for 4/14:

Time (Hrs)	Casing Press (psig)	Time (Hrs)	Casing Press (psig)
0001	430	1100	420
0200	435	1300	437
0400	445	1500	448
0600	460	1800	463
0800	470	2000	474
0830	475	2200	412
0900	408	2400	425

4/15/92 Depth: 3488'
Well shut in. Waiting on orders and monitoring wellhead pressure. Wellhead pressure kept below 500 psi by bleeding off fluid.

4/16/92 Depth: 3488'
Well shut in. Waiting on orders and monitoring wellhead pressure. Bled off 1/4 bbl fluid at 0400 and 1930 hrs. Wellhead pressure data for 4/16:

Time Hrs	Casing Press (psi)	Time Hrs	Casing Press (psi)
0100	461	1600	464
0200	463	1800	469
0400	470	1900	470
0500	430	1930	472
0600	432	2000	400
0800	438	2200	409
1000	446	2300	413
1200	450	2330	415
1400	457		

4/17/92 Depth: 3488'
Well shut in, monitoring wellhead pressure. Waited for courts to rescind restraining order. At 1830 hrs, bled off casing pressure from 472 psi to 400 psi. Recovered 1/2 gal mud. H2S = zero. Wellhead pressure = 422 psi at 2330 hrs.

4/18/92 Depth: 3488'
Well shut in, monitoring wellhead pressure. Waited for temporary restraining order to be lifted. At 1500 hrs, bled off wellhead pressure from 470 psi to 400 psi. No H2S, no fluid.

4/19/92 Depth: 3488'
Well shut in, monitoring wellhead pressure. Waited on restraining order. At 1600 hrs, bled wellhead pressure from 468 psi down to 400 psi. No H2S, no fluid. Wellhead pressure = 425 psi at 2400 hrs.

4/20/92 Depth: 3488'
Well shut in, monitoring wellhead pressure. Waited on restraining order news. At 1630 hrs, bled off wellhead pressure from 460 psi to 400 psi. No H2S, no fluid.

4/21/92 Depth: 3488'
Well shut in. Waited on orders. Monitored wellhead pressure. At 1600 hrs., bled wellhead pressure from 450 psi to 400 psi. No H2S. No fluid. Wellhead pressure 430 psi at 2300 hrs.

4/22/92 Depth: 3488'
Well shut in waiting on orders. Monitored wellhead pressure. At 1600 hrs., bled wellhead pressure from 462 psi to 400 psi. No H2S. No fluid. Wellhead pressure 420 psi at 2330 hrs.

4/23/92 Depth: 3488'
Well shut in, waiting on permits. Rig placed on extended standby without crews. Courts granted injunction to halt operations. Monitored wellhead pressure. At 1600 hrs., bled wellhead pressure from 441 psig to 400 psig with DOH representative observing. No H2S. No fluid. Wellhead pressure 410 psig. at 2330 hrs.

4/24/92 - 6/28/92 RIG ON STANDBY WITHOUT CREWS

6/29/92 Depth: 3488'
Rig on day rate with crews at 0800 hours. Mixed 12 ppg calcium chloride water Mobilized Cudd and service companies.

6/30/92 Depth: 3488'
Mixed calcium chloride water. Tested blowout prevention equipment, O.K. Snubbed into hole with mill. Discontinued snubbing at sunset.

07/1/92 Depth: 3488'
Snubbed in to 2719'. Encountered fill (calcium chloride). Maintained well head pressure of 200-400 psi. Stripped out of hole to 2489'. Waited on daylight.

07/2/92 Depth: 3488'
Stripped out of hole to 2300 ft. Mudlines plugged with calcium chloride. Cleaned out lines. Stripped out of hole. Pressured wellhead up to 500 psi. Waited on daylight.

07/3/92 Depth: 3488'
Cleaned out choke manifold and ran in hole with drill pipe stinger on RTTS to 1018 ft and set RTTs at 50 ft. Backed off drill pipe at surface. Replaced 10"-1500 series master valve. Tested valve to 2,000 psi O.K.

07/4/92 Depth: 3488'
Reengaged RTTS. Tested blowout prevention equipment, including all rams and valves to 2000 psi, O.K. Pulled out of hole. Shut in well. Well head pressure zero.

07/5/92 Depth: 3488'
Performed rig maintenance. Rig on standby with crews. Well head pressure increased to 300 psi

07/6/92 Depth: 3488'
Performed maintenance work. Ran 2 7/8" tubing to 1200'. Circulated hole full of 12.1 ppg calcium chloride water.

07/7/92 Depth: 3488'
Ran in hole. Circulated at 1000', 1500', and 2000'. Maximum bottom ups temperature of 103°F.

07/8/92 Depth: 3488'
Circulated and conditioned calcium chloride water at 1993 ft.

07/9/92 Depth: 3488'
Circulated and conditioned calcium chloride water at 1993 ft. Flow line temperature 90°F.

7/10/92 Depth: 3488'
Circulated and conditioned 11.5 ppg calcium chloride water at 1993 ft. Flowline temperature 91°F to 96°F.

7/11/92 Depth: 3488'
Pulled out of hole. Shut in well. Maintained 400 psi well head pressure. Rig on standby.

7/12/92 Depth: 3488'
Rig on stand by. Well head pressure 400 psi. Waited on reissuance of Authority to Construct (ATC) after HDOH adopted state-wide limits on ambient air emissions.

7/13/92 Depth: 3488'
Rig on stand by. Waited on reissuance of ATC. Held 400 psi well head pressure.

7/14/92 Depth: 3488'
Modified snubbing blowout prevention equipment sack to allow rig to pull triples. Waited on ATC. Maintained 400 psi well head pressure.

7/15/92 Depth: 3488'
Completed BOPE modifications. Tested BOPE, O.K. Waited on ATC. Well head pressure 400 psi.

7/16/92 Depth: 3488'
Conducted H_2S safety drills with rig crews and associated personnel. Well head pressure 400 psi. Waited on ATC.

7/17/92 Depth: 3488'
Waited on ATC. Well head pressure 450 psi.

7/18/92 Depth: 3488'
Ran in hole with 4-1/8" milling assembly on 2-3/8" drill pipe to 1900'. Circulated and conditioned 11.4 ppg calcium chloride water.

NOTE: Authority To Construct well field reissued today.

7/19/92 Depth: 3488'
Ran in hole to 2708'. Had 20' bridge from 2710' to 2730'. Cleaned out to 2890'. Circulated. Pulled out of hole and picked up junk snatcher. Tripped in hole to 2760'. Circulated.

7/20/92 Depth: 3488'
Washed casing from 2760' to 3025'. Tagged plug at 3025'. Pumped down drill pipe at 1860 psi with 440 psi back pressure on well head. Tagged plug and reverse circulated. While reverse circulating the wellhead pressure increased dramatically. Shut well in with 1220 psi well head pressure and 1000 psi drill pipe pressure. Stripped in hole to 3030'. Unable to tag plug. Maximum well head pressure 1426 psi. Pumped dart into profile nipple and had small leak by. Pumped fresh water at 1 barrels/min. down tubing and 7 barrels/min. down annulus to keep well cool. Annulus pressure dropped to 580 psi.

7/21/92 Depth: 3488'
Retrieved top dart from profile nipple and reseated same. Continued to have leak by. Plugs not holding. Stripped drill pipe out of well. Froze connections at 2916' and 2824'.

7/22/92 Depth: 3488'
Stripped out of hole, freezing drill pipe tool joints every stand from 2824' to 2264'. One joint was found to leak in the tool joint with 2,250 psi at 2543'.

7/23/92 Depth: 3488'
Stripped out of hole, freezing drill pipe tool joints every stand from 2463' to 2004'.

7/24/92 Depth: 3488'
Stripped out of hole, freezing 2 3/8" drill pipe every stand from 2004' to 1700 ft. Worked tight spot at 1700'. Pumped into annulus at 4 barrels/min.. Annular pressure 590 psi. Pipe rotated and moved down hole freely.

7/25/92 Depth: 3488'
Pumped down annulus and cooled well at 4 barrels/min.. Worked tight spot at 1700'. Unable to work pipe past 1700'.

7/26/92 Depth: 3488'
Pumped water down annulus with a well head pressure of 600 psi. Waited on tools. Pulled into and stuck pipe in tight spot. Unable to move or rotate pipe. Pumped pipe free.
NOTE: Put several wraps of torque in pipe while attempting to work free.

7/27/92 Depth: 3488'
Pumped water down annulus at 3.5 barrels/min. with 624 psi wellhead pressure. Retrieved profile plug. Pumped 3,500 psi down drill pipe. Bled off to 2,300 psi in 1 hour. Reset profile plug. Profile plug held. Had no flow back through 2-3/8" drill pipe. Made up string mill and picked up 2 3/8" drill pipe and stripped into 2162'.
NOTE: Probably tightened all tool joints in 2-3/8" on 7/26/92.

7/28/92 Depth: 3488'
Stripped in hole to top of plug to 3156'. Pulled out of hole to 2251'. Retrieved profile plug with wireline. No flow from tubing. Stripped out of hole to 1700' and worked tight spot. Stuck pipe and freed pipe with 2,900 psi in annulus. Spotted 5 barrels acid in annulus at 1799'. Unable to work through tight spot.

7/29/92 Depth: 3488'
Stripped in hole. Worked, reamed and washed from 3156' to 3482'. Stripped out of hole to 1715'. (Probably ran outside of parted 7" casing.)

7/30/92 Depth: 3488'
With junk snatcher at 1715', made up string mill and stripped in hole. Worked junk snatcher through tight spot at 3156'. Stripped in hole. Polished 5" casing with string mill from 1681' to 1731'. Total depth 3462'. Stripped out of hole to 2,257'. Retrieved profile plug, checked for flow. Stripped out of hole.

7/31/92 Depth: 3488'
Laid down drill collars and junk basket. Recovered all tools. Pumped 34 strokes per minute at 574 psi into well. Ran pressure and temperature logs. Logging tool failed. Laid down drill pipe out of derrick.

08/1/92 Depth: 3488'
Laid down drill pipe. Pumped 3 barrels per minute into well. Rigged down Cudd equipment. Nippled down blow out prevention equipment.

08/2/92 Depth: 3488'
Set out blow out protection equipment. Nippled up 10" 1500 Barton master valve. Ran Flo-Log collar locator and found 7 inch casing parted at 3033' with the top of 7" casing stub located at 3185'.

08/3/92 Depth: 3488'
Pumped down well 37 strokes per minute at 575 psi. Master valve would not open. Pumped 20 barrels in viscous spacer into well through 3" side outlet on well head. Mixed and pumped, through 3" side outlet, 165 cubic feet class "G" cement with 40% silica flour and 3% calcium chloride. Displaced cement with 29 barrels water. Cement in place 8:55 p.m. Well head pressure 620 psi. Waited on cement.

08/4/92 Depth: 3488'
Waited on cement with well shut in. Pressure build up stabilized at 1,020 psi after 12 hours. Bled off well head pressure. Removed BOPE and 10"-1500 Barton master valves. Installed new Foster 10" 1500 valve. Nippled up BOPE.

08/5/92 Depth: 3488'
Nippled up BOPE and Cudd 450 snubbing equipment. Changed rams.

08/6/92 Depth: 3488'
Ran in hole with 8-1/2" bit on 5" heavy weight drill pipe. Cleaned out cement stringers to 384'. Cement solid at 384'.

08/7/92 Depth: 3488'
Snubbed while cleaning out cement with power swivel from 384' to 756' with 1700 psi back pressure held on annulus. Had wellhead pressure and flow line (CO_2) increases at 725' and 756'. Snubbed into hole, without rotation, from 756' to 881', while washing each joint down.

08/8/92 Depth: 3488'
Snubbed into hole without rotation from 881 to 1208 ft. Cleaned out cement with power swivel while snubbing from 1208 to 1286 ft. Circulated out 2100 psi kick. Cleaned out cement while snubbing with 1700 psi back pressure on annulus from 1286 to liner top at 1381 ft. Shut in well. Pumped into well. Maximum well head pressure 1200 psi. Pressure dropped immediately. Continued pumping 3.5 barrels per minute into well at 625 psi. Snubbed out of hole.

08/9/92 Depth: 3488'
Laid down bottom hole assembly. Ran P-T survey tools on slick line to obstruction at 1381'. Ran spudding assembly to 1381'. Unable to knock out plug. Pumped down well with 3.5 barrels/min. at 600 psi.

8/10/92 Depth: 3488'
Tested blow out prevention equipment, O.K. Pumped into annulus with 3 Barrels/min. at 620 psi. Snubbed and stripped 4-1/8" milling assembly on 2-3/8" drill pipe into liner top at 1381'. Cleaned out with power swivel in liner hanger and 5 inch casing to 1410'. Annulus pressure dropped to 575 psi. Cleaned out to 1551'.

8/11/92 Depth: 3488'
Snubbed out of hole. Ran sinker bars on slick line to 2800 ft. Shut in well. Kept well cool by pumping 3 Barrels/min. water into well at 580 psi through wing valve. Nippled down BOPE. Installed top master valve, flow tee, DSA and 3" swab valve.

8/12/92 Depth: 3488'
Installed flow line and throttling valve. Rigged up for flow test. Opened well at 11:30 a.m. Flowed one hour. Flanges leaked due to heat expansion. Shut in well. Cooled well with water through 3 inch side outlet. Maintained 1 barrels/min. cooling water while tightening bolts. Well head pressure at 760 psi while pumping. Shut in pressure built up to 1058 psi after six hours. Shut well in until daylight.

8/13/92 Depth: 3488'
Opened well at 0800 hours through 2 inch bypass line to heat up surface equipment. Shut in well and retightened all flanged connections. Reopened well. Found leak in expansion spool packing. Shut in well & cooled well with 1 Barrels/min. water through side outlet. Repacked expansion spool. Opened well at 1235 hours through 2 inch bypass line to muffler. Estimated flow rate 150 KPH at 1750 psi well head pressure, 590°F well head temperature and 50 psi flow line pressure. All steam flow to muffler abated. Diverted flow through throttle valve and increased to 200+ KPH rate. Started plant heat up at 1355 hours by splitting flow to muffler and plant. All steam flow diverted to plant at 1700 hours. Throttled flow to 100 KPH at 1900 hours.

8/14/92 Depth: 3488'
Flow tested well at 100 KPH mass flow until 1300 hours. Increased rate to 190 KPH steam and flowed until 2150 hours. Reduced rate to 161 KPH mass flow due to injection problems. At 161 KPH total mass flow and the flash was 87% with 1704 psi well head pressure and 619°F of wellhead temperature.

8/15/92 Depth: 3488'
Flowed well at 161 KPH total mass with 87% flash. At 1020 hours increased rate to 275 KPH. Well stabilized at 1300 hours. Total flow was 311 KPH with 1135 psi well head pressure, 569°F wellhead temperature and 88% flash. At 1700 hours reduced rate of flow to 212 KPH for 2 hours then reduced rate to 118

KPH at 1930 hours. Flowed 100 KPH steam with 1800 psi wellhead pressure and 628°F well head temperature, during night.

8/16/92 Depth: 3488'
Flow tested well to plant. Total mass flow 118 KPH at approximately 89% flash with 1800 psi wellhead pressure and 628°F wellhead temperature.

8/17/92 Depth: 3488'
Flow tested well at 118 KPH with 628°F wellhead temperature and 1800 psi well head pressure to plant. Increased rate at 1520 hours to 243 KPH total mass flow with approximately 86% flash at 577°F wellhead temperature and 1280 psi wellhead pressure. Reduced flow rate at 2300 hours to 207 KPH with 1410 psi wellhead pressure and 590°F wellhead temperature.

8/19/92 Depth: 3488'
Flow tested well to plant at various rates and wellhead pressures. Beginning at 1600 hours, held flow line pressure to plant constant by adjusting throttle valve. Maintained approximately 195 KPH steam to plant. At 2015 hours shut in well to correct problems at the plant. The expansion spool was repacked after the well was shut in.

8/20/92 Depth: 3488'
Well shut in. Wellhead pressure at 1364 psig. Prepared to move rig. Ended well test early due to plant limitations.

8/21/92 Depth: 3488'
Wellhead pressure at 1350 psi. Ran pressure and temperature surveys to 2800 ft. Shut in well. Wellhead pressure 1339 to 1350 psi.

8/22/92 Depth: 3488'
Ran spinner and temperature surveys. No cross flow. Well in good shape. Shut in well with wellhead pressure of 1350 psi.

8/23/92 Depth: 3488'
Installed injection ports and repacked expansion spool. Rig on stand by with crews. Wellhead pressure equal to 1350 psi.

8/24/92 Depth: 3488'
Rig released at 7:00 a.m. from stand by with crews. Rigged down and laid down derrick. Loaded out equipment. Started moving to KS-3. FINAL REPORT